THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—13TH YEAR. SYDNEY: SATURDAY, JANUARY 2, 1926. No. 1.

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SOME MEDICAL ASPECTS OF WORKERS' COMPENSATION INSURANCE.[1]

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Principal Medical Officer for Workers' Compensation.

I HAVE first to thank you for the honour you have done me in asking me to read a paper to you this evening. I fear that you will find in it no new ideas and little information. For these reasons and because I wish to speak on matters regarding which there is apparently considerable difference of medical opinion, at any rate in Queensland, I have made my paper intentionally brief. For the incorrectness of its title and its many shortcomings I crave your indulgence.

I propose to divide my subject into the following: (i.) The medical procedure in dealing with a claim for compensation; (ii.) estimation of permanent disability; (iii.) malingering; (iv.) traumatic hernia; (v.) heart strain; (vi.) a common form of sprained back; (vii.) epididymo-orchitis, hydrocele and varicocele; (viii.) treatment of Colles's and Pott's fractures; (ix.) miner's phthisis; (x.) plumbism.

[1] Read at a meeting of the Queensland Branch of the British Medical Association on October 2, 1925.

The Medical Procedure in Dealing with a Claim for Compensation.

When an application for workers' compensation, accompanied by the employers' report and a medical certificate, is lodged at the State Government Insurance Office, a somewhat different procedure is followed according as the claimant for insurance resides in Brisbane or in some other part of Queensland.

In Brisbane it is the custom to write to an injured worker, instructing him to present himself for medical examination at the insurance office. Where this is not possible on account of the severity of the injury, the claim papers are submitted to a medical officer for opinion. It then becomes his duty to advise the Insurance Commissioner whether in his opinion the condition certified to by the medical practitioner attending the injured worker could have been caused as alleged. If the medical officer considers the injury could have been so caused, he advises on the probable period of disability and when the injured worker should be able to present himself at the office for examination.

In the majority of cases in which the medical officer differs from the outside practitioner as to the causation of the disability, a detailed report is

asked for from the medical attendant. If, after perusing this, the medical officer adheres to his opinion, it is usual for him to be instructed to confer with his colleague. If from this consultation no agreement is arrived at, the claimant is examined and the papers studied by some independent medical practitioner, physician or surgeon, according to the nature of the case.

In the country it is obvious that such a course could not be followed; it would be quite impossible to employ a medical officer in every town. Outside Brisbane the claim is made to the superintendent of a branch office, where such exists or to the local clerk of petty sessions where no branch office exists. These officers have the power to admit, but not to reject claims. This latter can be done only by the Insurance Commissioner personally or in his absence his deputy. Superintendents of branch offices and clerks of petty sessions admit all straightforward claims, but all country claims for industrial disease, hernia, heart strain and some other conditions are always referred to head office.

As in Brisbane claims, when the medical officer disagrees with his country colleague, a full medical report is obtained from the attending practitioner. If, after reading this, the medical officer is still adamant in his opinion, one of two courses is followed. Usually the injured worker is examined by another local medical man, usually in consultation with the worker's own medical attendant. If this course is not followed, the whole of the claim papers are referred to a Brisbane physician or surgeon for opinion.

Both in Brisbane and in the country, where the preponderance of medical evidence apparently favours the worker and even though the Department's own medical officers are against the application, the claim is admitted. When it is against the worker, there are two roads which he may tread in the hope of reaching his goal; he may apply that his case be reviewed by a medical referee or appeal to an industrial magistrate to adjudicate his claim. These medical referees are medical practitioners appointed by the Governor in Council under the *Workers' Compensation Act*. Should an injured worker decide to have his case reviewed by a medical referee, he must agree to accept the medical referee's ruling as final.

It is obvious to you that every effort is made from the medical side to investigate thoroughly each application for workers' compensation. When there is a medical doubt as to the causation of the disability, the worker is given the benefit of that doubt and I think rightly so.

I have spoken of industrial magistrates; these gentlemen are laymen. So far as I am aware, there is no workers' compensation act in the world which does not employ non-medical men as the final board of appeal. To my mind this is ridiculous. A layman is asked in some nine hundred and ninety-nine cases out of a thousand to give an opinion on a purely medical or surgical matter; he is asked whether the condition from which the applicant for insurance is suffering, is the result of an accident or of an industrial disease; he is expected to give the percentage of permanent disability, where such exists. True he is guided by medical witnesses on each side. There may, however, be a more astute counsel either for plaintiff or respondent; the medical witnesses on one side may give evidence better than those on the other. The medical practitioner instructing counsel on one side may be used to this class of work.

May I quote a case:

H.I. was certified to be suffering from arsenical poisoning from having his clothes saturated with an arsenical solution. The claim was admitted. Some months later a full medical report was obtained which clearly showed that the man was not suffering from peripheral neuritis which was alleged, but from a lesion of the central nervous system. At the same time that this medical report came to hand, a clipping of the claimant's hair and nails were received at the insurance office. These were sent to the Government Analyst and his report showed that if the amount of arsenic found in the specimen were excreted, the man must have had about ten pounds of arsenic in his body. I recommended that the applicant be put into hospital for observation and examination by an independent medical practitioner. The man refused and compensation ceased. Some twelve months later the claimant agreed to go into hospital for observation. On being examined by an independent medical practitioner, it was certified that he was suffering from disseminated sclerosis. The claim was then rejected. The applicant appealed to an industrial magistrate. This gentleman's judgement was interesting from a medical aspect. He found that the man had suffered from arsenical poisoning from the date of application for insurance until the date of the examination by the independent medical practitioner, whose examination proved that he was suffering from disseminated sclerosis.

This judgement was given in spite of the medical fact that the man had exactly the same signs and symptoms on the date of the medical examination by the independent practitioner as he had on the date he first refused to go to hospital for observation.

I am of opinion that it would be of advantage both to the applicant for workers' compensation and to any insurance office dealing with workers' compensation, if the final decision on all purely medical questions were given by an independent board of medical practitioners.

It sometimes happens in examining cases of injury for the office that some modification or change of treatment will hasten recovery. Such modification or change of treatment is never given without consultation with the insured's medical attendant. Should he not agree to such change, an independent opinion is sought and if this independent practitioner considers such alteration of treatment is indicated, a triple consultation is held between the consultant, the insured's medical adviser and the department's medical officer. These triple consultations are particularly rare.

This rule has not so far been observed in cases where massage *et cetera* is deemed necessary. In these cases an officer of the Department gets into touch usually by telephone with the practitioner attending the injured worker and asks if he will be agreeable to such treatment. I cannot call to mind any case where the practitioner has not acquiesced.

Estimation of Permanent Disability.

The Queensland *Workers' Compensation Act* has a schedule in which a definite monetary value is alloted to each member of the body. Where an injured worker, for example, has had a phalanx of a finger amputated or has lost the sight of an eye, no trouble is experienced in assessing the permanent disability; this has already been done by act of Parliament.

No consideration is taken for the type of work in which the worker is engaged. A typiste who had her index finger amputated, would not receive a greater sum than would a tramway signalman who had met with the same injury.

When the function of a part is diminished, the problem is not always a simple one. A clerk with an ankylosed knee is very slightly disabled for his occupation, whereas a labourer would find difficulty in carrying on his job and a miner would be almost completely disabled from following his avocation. It is in these cases of diminished function that great care must be taken in assessing the permanent disability, if the injured worker is to get justice. The nature of the man's occupation must be considered fully and how much of that work he can perform in spite of the disability must be decided. When the insured is a skilled worker, it is frequently necessary to see other men doing the various jobs that the injured person performed prior to his accident, and it is sometimes necessary actually to try out the man himself. It is really extraordinary how many of these men with serious permanent injuries adapt themselves to their altered anatomy. One case in particular comes to my mind. This man is a waterside worker and has lost all the fingers and thumb of his right hand. The stump, merely the palm, is now so mobile that he can use a knife, indeed he can do more, for at my request he signed his name holding the pen quite easily in what remained of his right hand. Another interesting case is that of a farm hand who suffered a dislocation of his hip. The dislocation was never reduced, yet the man did not lose a day's work.

Malingering.

Many people, both medical and lay, believe that malingering and attempts at malingering are very frequent under the *Workers' Compensation Act*. Some indeed go so far as to say that the Act is an encouragement to malingering. I emphatically state that attempted malingering is very rare among the workers in Queensland. The majority of working men I find are particularly honest fellows, they have the greatest contempt for "lead swingers." As principal Medical Officer for Workers' Compensation, I have more trouble in persuading injured workers that they are still unfit to follow their occupations, than I have in making them believe that they have recovered from their injuries. It is interesting that the more strenuous the occupation, the more ready the injured worker is to return to his work. The wharf labourer is an example of this.

That malingering must be rare in Queensland is shown by the following. There were 11,220 admitted claims for compensation in the year ended June, 1924. Of these persons 8,240, that is over 73%, were back at work within three weeks from the date of injury. At the end of eight weeks only 9·1% were still disabled. When you remember that all fractured femora, most fractured tibiæ, all herniæ operated upon, all cases of miner's phthisis and plumbism are included in this 9·1%, you must admit that malingering is most uncommon. That among so many cases there are malingerers I must of course admit.

I fear that I have not discovered anything new to tell you in the direction of detecting malingering. Even among malingerers old ideas die hard. The so-called "sprained back" still holds pride of place among the injuries which they fondly imagine cannot be detected. They do not realize the difficulty they will experience on being examined in having to localize accurately alleged points of tenderness and they are apparently unaware that pressure with the bell of a stethoscope should cause quite as much pain on a tender area as pressure with the pad of a finger.

The cases of possible malingering for which I know no method of detection, are those in which a man has suffered a head injury. It seems impossible to disprove an allegation that such a man is suffering from cephalalgia and attacks of vertigo. A colleague who specializes in psycho-therapeutics, contends that headaches and giddiness as after effects of head injury are symptoms of a neurosis. As the majority of persons who have these symptoms, completely recover, I doubt the correctness of my friend's theory. In fairness to him I must admit that I do not remember any case of head injury accompanied by loss of consciousness in which there was not amnesia, not only of the accident itself, but of a varying period of time previous to the accident.

Hernia.

Is it possible for a person to suffer from a hernia from one single effort? Authorities throughout the world are certainly divided in their opinions. From the literature on the subject there seems to be as equally eminent surgeons who believe in such a condition as "traumatic hernia," as those who consider such a condition impossible.

I understand that all insurance offices in their personal accident policies specifically bar hernia as an accident for which the insured is entitled to receive payment for disability. This condition has greatly interested me since I have been in charge of the medical administration of the *Workers' Compensation Act*. Personally I have now no hesitation in stating that I believe "traumatic hernia" is a real thing. In fact, I go further than most who believe in the existence of this condition, for I am convinced from examining many affected persons that "traumatic hernia" is by no means rare.

In many applications for workers' compensation for hernia there has been abundant medical proof that the hernia was non-existent at short periods

prior to the accident which was alleged to have caused it. In one case the man had been examined for life insurance one week before the accident and at this examination hernia was absent.

In every case in which there was no doubt that the hernia was not present shortly before the alleged accident, the immediate symptoms complained of were identical, namely sudden pain, sharp and stabbing in character, nausea and feeling of faintness and in most cases immediate inability to continue at work.

Now it must be remembered that many of the applicants for workers' compensation insurance are uneducated men whose mentality is below the average and there is frequently a difficulty in obtaining an accurate history of the symptoms immediately following the accident. The following case will illustrate my meaning.

A tramway motorman in order to avoid running down a sulky applied his brake very quickly. He made an application for hernia which he alleged was due to strain in suddenly applying the brake of the tramcar. He denied feeling faint or having nausea at the time of the supposed accident. I asked him if he immediately drove the car on and his reply was "no," he had had to lean over the front of the tram. When questioned as to the reason for this, his answer was because he felt squeamish and light in the head. Examination two days after the alleged accident revealed a small bubonocele and definite tenderness in the internal ring. Operation five days after the accident disclosed a thin-walled sac with definite ecchymosis in the neck.

Early this year I obtained a set of "Keen's Surgery." I was interested to read on page 594 of Volume VI. a description of symptoms in traumatic hernia very closely resembling those which I have observed. To quote the passage:

> The sudden projection of hernial contents into the preformed sac is accompanied by definite immediate symptoms. The affected individual suffers acute pain at the site of the hernia, has nausea or sickness, feels faint, at once undoes his clothes, finds a small lump there, ceases work at once and has to be helped or carried home.

In my opinion the immediate disability is not necessarily so great as described by Mr. Sheen. A well-known Maryborough surgeon in criticizing the above quotation, though agreeing with the necessity of pain, nausea and faintness as immediate symptoms to prove a sudden hernia, remarked that the immediate cessation of work and having to be helped or carried home did not necessarily apply to Australians, as "they had too much guts." With my Maryborough colleague I am in entire agreement.

In all cases of hernia submitted to me for an opinion I invariably advise the Insurance Commissioner to reject claims if the symptoms, sudden pain, nausea and feeling of faintness, are not present. My reasons for offering this advice are:

(i.) In every case that I have examined in which there was absolute proof that the hernia was not present at a short period prior to the supposed accident, the injured worker had these symptoms.

(ii.) In operations on the abdomen under local anæsthesia any undue strain on the mesentery or rough handling of the bowels gives these symptoms.

(iii.) The contents of all recent herniæ are bowel.

Heart Strain.

The term "heart strain" seems to be a most unscientific definition for a condition which I take to mean dilation with symptoms of acute cardiac failure brought on by exertion. There is a widespread belief among the laity and apparently among some members of the medical profession that cardiac strain in a person with a healthy heart is common. Except those cases of collapse after some very strenuous athletic effort which I suppose could be termed heart strain as it is an exhaustion of reserve force of the heart, but from which a rapid recovery follows with a short bodily rest, strain of a healthy heart must be very rare, if it occurs at all. Eminent cardiologists consider it practically impossible.

Now it has been laid down in a House of Lords decision that when a workman is suffering from a disease or disability, any untoward event happening at his work must be regarded as an accident if it aggravates his disease or disability to such an extent as to prevent his following his avocation, even though it would not prevent a healthy individual from working. Many men with diseased hearts follow occupations involving manual work of a heavy nature, so that their hearts gradually weaken until on account of the severity of their symptoms they are forced to cease work. In such cases no one single action can be blamed for the cardiac breakdown; the nature of their work has undoubtedly hastened the onset of the severe symptoms of heart failure, but as no one event can be looked on as the occasion of the heart failure they are not entitled to workers' compensation insurance, that is to say, a continual process is not regarded as an accident.

Should, however, a worker with a diseased heart be attacked by the symptoms of heart failure whilst making some effort, this effort is regarded as the the occasion of his disability and he is entitled to compensation.

I am of opinion that when one single act is the last part of the cause of heart failure to be added before the heart failure takes place, the individual suffers immediate and great disability; it is impossible for him to continue at his work and even the slightest effort causes great distress. It is very rarely that such persons ever recover sufficiently to return to their former occupations.

Not infrequently applications are made for compensation for heart strain in which the alleged accident, some supposed overexertion, occurred even at such a long period as a month prior to their having to cease work. I maintain that, although the nature of the occupation may have hastened cardiac failure, the supposed accident cannot be held to have materially aggravated the pre-existing heart disease. From the number of medical certificates I receive in this type of case, I am fully aware that my view is not held by quite a number of my medical brethren.

Sprained Back.

That interesting injury termed by the laity "sprained back" is one with which you are all

familiar. I propose to deal with only one variety of sprained back that is the most common form, perhaps 90%. I refer to a tearing of some fibres of one of the *erector spinæ* muscles. Now this injury, though seen so frequently by every practitioner, very rarely receives proper treatment. With a sprain of any other muscle in the body, the practitioner always puts the muscle in the position of rest. It has always puzzled me why so many of my medical brethren apply a porous plaster or, what is worse, put the patient to bed where he lies on his back with pillows under his head and shoulders—an ideal way of stretching the injured muscle. The older practitioner who prescribed a lotion, gave better treatment in this injury, for if the lotion or liniment probably did no good, yet the massage in using the liniment hastened absorption of the effusion at the site of injury. Rest in the prone position, with a pillow under the pelvis and another under the head and chest, is a simple but efficient treatment in these cases. Skilled massage where possible or even the old-fashioned rubbing in of a liniment is good additional treatment. In every book on industrial surgery that I have read, it has been laid down as an axiom that sprained back is always a unilateral condition. In the great majority of cases there is no doubt that this is true, but I have seen at least three cases in which both *erectores spinæ* were affected. As recently as three weeks ago I saw such a case.

This man with three workmates was carrying a case of machinery. The workmate at his end slipped, causing the injured worker to bear suddenly the whole weight of his end of the case. The man felt sudden pain first on one side of his back and after a very short but appreciable interval on the other, as though, to quote his own words, "he had received two blows with a sledge hammer." Examination a week later showed two small circumscribed areas of tenderness over either *erector spinæ*, but at different levels. On putting the muscles on the stretch he could quite accurately localize these two areas as the sites of pain.

The other two cases closely resembled this.

Epididymo-Orchitis—Hydrocele—Varicocele.

A working man frequently applies for workers' compensation insurance with as an alleged injury a swollen testis, epididymis or both. The condition, he says, was caused by a strain in lifting. I divide these claims into two classes: (i.) Those in which the applicant for insurance suffered no immediate disability and (ii.) those in which the worker says he was forced on account of pain to cease work either immediately or within a very short interval of time. In the first class of case I never hesitate in recommending the Insurance Commissioner that the claim be rejected. The second class of case offers difficulties to an industrial medical officer. There may be evidence that the man made some extra heavy effort and immediately complained of pain and ceased work at once or very shortly afterwards. Can a sudden lift when considerable effort is necessary cause a painful swelling of one or both of these organs? If the answer to this be in the affirmative, frankly I am quite unable to appreciate the *modus operandi*. Of many theories as to how a sudden strain in lifting causes orchitis, epididymitis or both one which appeals to me as particularly ingenious, is that the man suffering from the condition has abnormally developed cremasteric muscles and during the exertion one of these muscles contracts so forcibly as to cause the testis to come in violent contact with the pillars of the external ring. In the light of this hypothesis I have repeatedly tested the cremasteric reflex in cases of epididymitis or orchitis, but I have never found any abnormality in this reflex.

A surgical friend suggested that in many of these cases a small preexisting sac is present and that the increased intraabdominal pressure in an undue effort forces some of the abdominal contents into the sac, thereby causing a blockage of the blood return from the testis. I have carefully tested this hypothesis, but so far I have not been able to detect in any case the slightest bulging at the internal ring when the subject coughed. Another hypothesis is that a subacute torsion of the cord occurs. Keen mentions strong muscular effort where a man has an abnormally mobile testis as a cause of torsion and Choyce considers that subacute torsion may account for many cases of epididymo-orchitis where the origin is obscure. I have, I believe, seen two cases of subacute torsion alleged to have been caused by lifting. In cases of torsion the pain is very severe and is situated in the canal at first.

Two other conditions are frequently claimed to be the result of a strain in lifting, varicocele and hydrocele. So far I have not met with a case where there has been immediate disability. I cannot even imagine such conditions being caused by such an action. I have never had any hesitation in advising the rejection of such claims for workers' insurance.

Fractures.

I do not propose to speak on fractures in general, for that would require a paper itself, but there are two very common fractures which every general practitioner frequently treats and these fractures unfortunately often leave permanent and great disability. I refer to the Colles's and the Pott's fractures. I have seen so many results of the different methods of treatment in these injuries that I venture to tell you which I believe give the best results.

With a Colles's fracture absolute anatomical reduction under a general anæsthetic is necessary. This reduction must be obtained, even if the aid of an X ray screening is necessary. Early active movement, that is within twenty-four hours of the time of injury, is the second part of treatment. Now this active movement must attain the full range of movements. With a poor patient someone in the house with intelligence can be shown how to hold the wrist while these active movements are being made.

With this treatment I have known men able to sign their names within five days and labourers to be back at work within four weeks of the injury.

The so-called functional reduction which gives at the end of treatment a full range of movements, but an ugly deformity, has been and is considered by many practitioners to be efficient treatment. This is quite incorrect. In a very large proportion of cases so treated the altered position of the bones of the wrist cause in periods varying in my experience from six months to three years an osteo-arthritis of a particularly painful character.

The most successful method of treatment of Pott's fracture which I have seen, is really a very simple one. The injured leg is put on a splint slightly inverted and strongly dorsiflexed and left there until the swelling has disappeared. In this same position it is then put in plaster of Paris and the patient encouraged to hobble around with the aid of sticks or crutches as much as possible. After three weeks the plaster of Paris may be removed and the heel of the patient's boot raised on the inner side and elongated. The wearing of such an altered boot for a period of three months is advisable.

Miner's Phthisis.

Miner's phthisis is one of the industrial diseases included in the Queensland *Workers' Compensation Act*.

In no condition does the textbook teaching differ so much from what is observed in examination of affected persons. You will all remember reading in your student days that these sufferers have a barrel shaped chest and all the signs and symptoms of emphysema and chronic bronchitis. From my observations I cannot describe any shape of the chest as typical; I have never found on percussion a tympanitic or hyperresonant note. On the contrary, most of these chests have an impaired percussion note. Auscultation frequently reveals rhonchi scattered throughout the whole chest, but as often there are no adventitia. The only constant physical signs that I have detected are: (i.) A definite lack of chest expansion, very rarely greater than 2·5 centimetres (one inch), usually less than 1·8 centimetre (threequarters of an inch); (ii.) prolongation of expiration, with both inspiratory and expiratory sounds weak; (iii.) an impaired percussion note over the whole chest. The majority of the patients that I have examined, have had superadded pulmonary tuberculosis, this of course altering the physical signs in that part of the lungs affected by this disease.

Except fractures there is no condition in my opinion in which an X ray examination is so necessary. Except sometimes when a superadded pulmonary tuberculosis is so extensive as to involve almost the whole of the substance of both lungs, an X ray film or screening will reveal the presence or absence of miner's phthisis. So wherever possible I have a screening done and a film taken. My opinion of an X ray diagnosis in miner's phthisis is such that despite the absence or presence of any physical signs, I have no hesitation in recommending the admittance or rejection of a claim on radiographic evidence.

An X ray diagnosis can be made very early in this disease, long before any symptoms are present or physical signs can be detected.

Some three years ago a miner was sent to Brisbane on account of an injury in the upper part of one of his humeri. The X ray film, being rather large, included part of the lung and in this there was a uniform mottling. I had a skiagram taken of the whole chest and this demonstrated definitely the presence of generalized fibrosis. The man at that time had no symptoms and the only physical sign I was able to detect, was a chest expansion of 3·1 centimetres (one and a quarter inches); that is a chest expansion from complete expiration to full inspiration. Of course he was warned of his condition and the danger he ran if he returned to a mining occupation. The warning unfortunately was ignored. Some six months ago he applied for miner's phthisis compensation.

In my opinion it is a matter for great regret that in Queensland we do not follow the example of the South Africans and have periodical X ray examinations made of all miners. An early diagnosis and the prevention of any person suffering from miner's phthisis or pulmonary tuberculosis from working in a mine would save very many valuable young lives, for a man having early miner's phthisis suffers little or no disability and in all probability if he took up some open-air occupation he would not develope pulmonary tuberculosis and would have a chance of living to a ripe old age.

In the reports of the commissions on miner's phthisis I have been surprised to see that the findings of the commissioners were that pulmonary tuberculosis is not more prevalent among miners than among other workers. From my small experience I believe to the contrary.

It is a matter of interest that there have been only two cases of miner's phthisis in the past three years in Queensland in which the miners have been coalminers. Pulmonary tuberculosis among coalminers is particularly rare. It is said that working among coal gives some immunity to pulmonary tuberculosis, the idea being that the coal dust has an inhibiting action on the toxic effect of the small particles of silica inhaled.

Plumbism.

Except miner's phthisis lead poisoning is responsible for more disability than any other industrial disease in Queensland.

The majority of the cases are acute, the patients suffering from colic, anorexia, constipation *et cetera*. The typical blue line I find in some 60% of cases at the margin of the gums and teeth. It is not a line at all. If you examine under a lens you will find it made up of very tiny spots. The colour varies, being sometimes a very light or slaty blue. Although found most frequently in men who are not particular as to their dental toilet and particularly when the gums are unhealthy, I have observed it in perfectly healthy mouths. The line seems to be deep in the gum. A large percentage of persons who have had several attacks of acute lead poisoning, however, suffer from *pyorrhœa alveolaris*. Kober and Hansen in their "Diseases of Occupation and Vocational Hygiene" describe the occasional occurrence of a bluish-black patch about the size of

threepence with irregular edges found on the inner side of the lip or cheek opposite a decayed tooth or one covered with tartar. I have seen only one of these patches and it was only about one-fourth of the size described.

A striking sign in both the acute and chronic cases is the definite pallor. I know that the appearance of mucous membranes is not a particularly accurate guide to the number of erythrocytes present in the blood. In all my cases a count of the red blood corpuscles revealed a decrease, the number being between three and four million. This anæmia seems to have a limit and I have not found one which has progressed beyond three million. Sometimes there has been a slight leucocytosis, but this is not common. In some 20% of cases I have observed basophile granules in the erythrocytes. Were I more experienced in the use of the microscope, I have no doubt that this percentage would be higher, for it seems probable that this condition will be present so long as lead is in the body. That lead does remain for a considerable term in the body is proven by the large number of patients who manifest symptoms long after they have ceased working with this metal.

Of chronic lead conditions I have seen only a few and these have been peripheral neuritis. There was nothing unusual about them except in one instance.

This man was undoubtedly suffering from plumbism. He had the blue line, was anæmic, his red cells numbered 3,500,000 to the cubic millimetre. Basophile granules were present. He suffered from colic and had a metallic taste in the mouth and constipation. There were pains in both lower limbs with weakness and slight foot drop. The interesting part of this case was that he had increased knee and Achilles jerks for two months when they gradually came back to normal.

All insurance offices get claims for compensation for plumbism when none exists. Every painter who suffers from abdominal pain, has not lead poisoning. I have known gall stones and appendicitis to be labelled lead colic. At the State Government Insurance Office when the case is doubtful, for example when there is no blue line and the only symptoms are abdominal pain and constipation, I do a blood count and advise admitting or rejecting the claim on the result.

HYDATID CYSTS OF THE LUNG AND THEIR SURGICAL TREATMENT.[1]

By W. J. STEWART MCKAY, M.B., Ch.M., B.Sc., (Sydney),
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I DETERMINED to write this paper, because a surgeon from Victoria who was visiting the Lewisham Hospital, told me that he always operated on hydatid cysts of the lung in two stages. He said that he sutured the adventitia to the parietes and then let a week elapse before opening the cyst without general anæsthesia. His reason for doing this was that he practised in a country town and he could not get anæsthetic administered by the intratracheal method, so rather than take the risk of the patient dying under the anæsthetic he resorted to the two stage operation. My comment on this is that he is a very wise man; but while one may say that of a man who lives away in the country, I do not consider that a man who lives in a city, is wise in adopting the two stage plan for hydatid cysts of the lung. The reason is that the advent of intratracheal anæsthesia has altered the whole question of the operative treatment of hydatid cyst of the lung. I hope that Dr. Lidwill and I will be able to convince you on this point this evening.

Now before I go on to the actual details of the operation, I think that it is very necessary to mention some points about hydatid cysts of the lung which have important bearings on the operation itself.

First of all let me remind you that after the liver, the lungs are the most frequent seat of hydatid cysts, consequently many have jumped to the conclusion that the ova of the *Tænia* must be taken into the lungs by inhalation. Thomas and others of the old school have, however, pointed out that the chief objection to this view is that we naturally ask how the thick coats of the eggs of *Tænia echinococcus* are going to be digested in a place where there is no gastric juice. In later years it was suggested that the mucous secretion of the inflamed bronchial tubes might acquire sufficient solvent power to set free the embryo from the ovum.

I recently operated on two brothers who came from the country, each with a hydatid cyst in his left lung and as they had no other cysts I was at liberty to suppose that they got their infections from the dust of the sheep yards freely manured by the sheep dogs. In contrast to these two cases, I operated on a woman who had a hydatid cyst at the base of her left lung. She had already been operated on by me during the last ten years some twenty times for hydatid cysts in every part of her body, but the brain. Of the last four operations two were for hydatid cysts of her pleura, one for hydatid of her diaphragm and one for hydatid cyst of the base of her left lung. One naturally concludes in this case that her lung had been infected from her liver through her diaphragm or by way of her blood stream. Now while the dust theory of the origin of hydatid cyst of the lung may be a popular belief, those who have studied the matter, will not admit that infection occurs this way. I asked Professor Welsh, of the University of Sydney, to give me his views on the matter. He wrote me that in order that the ova of *Tænia echinococcus* may develope in man's body they must be swallowed and reach the alimentary tract. This happens even if the ova are inhaled in the dust, for then they are caught at the back of the throat and swallowed. If inhaled directly into the lung, they do not develope into hydatid cysts, they simply shrivel and die. After the ovum is received into the stomach the shell of the ovum is digested and there is liberated

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on September 24, 1925.

the embryo armed with six boring spines and it bores its way through the intestinal wall and enters a vein or a lymphatic vessel. Most of the embryos enter a tributary of the portal vein and are so carried to the liver where most of them settle down.

Now as Dr. Harold Dew, of Victoria, who has given so much study to the subject of hydatid disease, has pointed out, the liver acts as a filter in some animals more effectually than in others. Thus while this parasite sometimes passes the hepatic filter in man and reaches the *vena cava* and from then is passed on into the lung where hydatid cysts occur in 10% of all cases affected, on the other hand there are animals in which the liver filter is not at all effective. For instance in the squirrels 98% of the resulting hydatid cysts appear in the lung. And now that the embryo has reached the lung what happens? I wanted to find out how it came about that the developing cyst so affects the bronchial tubes that they become perforated. I asked Professor Welsh and Dr. Dew and they have kindly told me what they consider occurs and their conclusions are almost identical. Professor Welsh says that the embryo is caught in one of the pulmonary capillaries, settles down there and starts to grow where the pulmonary capillaries run, that is, in the delicate connective tissue framework of the lung. From an embryo of microscopical dimensions there is gradually developed an encysted brood of parasites, the hydatid cyst, which may reach the size of an orange. Before it has reached this size, it must have pushed aside and lacerated the surrounding lung tissue very considerably. In the course of the laceration of the lung, the hydatid cyst readily ulcerates into a bronchus and the ectocyst ruptures into the bronchus. This is made all the easier because the adventitious cyst is not strongly developed in lung tissue. Again some of the hydatid cysts have probably developed from embryos which settled in the connective tissue of a bronchial wall, thus they grow in such a position as to make rupture into a bronchus inevitable.

As regards the direction of growth of the cyst in the lung, fortunately for the surgeon it leads towards the surface and the wall of the cyst is thicker at the surface than deep down in the lung. This fact Professor Watson, of Adelaide, long ago impressed on me and it is of course a great help to the surgeon when he encounters a firmly resisting adventitia or ectocyst as he is able to anchor his quarry much more easily. As Professor Welsh says, the adventitia may be but feebly developed in lung hydatids, but Bird has recorded cases in which he has seen old lung cysts with as thick an ectocyst as any in the liver; while in some cases when the cysts were not larger than an apple, they lay immediately in contact with the lung tissue, there being no adventitia.

Now before I proceed any further I want to make one point clear. In reading papers and books written on hydatid cysts thirty years ago one finds that certain terms were employed and since then different terms have been employed. In the olden days the soft thin cyst that looks like a delicate football bladder and which contains the fluid and the daughter cysts, was termed the endocyst, while the surrounding tissues altered by pressure and inflammation were alluded to as the ectocyst. But the usual nomenclature of today is that the cyst proper is regarded as made up of two layers, the endocyst and the ectocyst, while the surrounding altered tissues making up the supporting wall of the hydatid which is not a part of the hydatid cyst, is now called the adventitious cyst or better still, I think, the adventitious pericyst. If these points are not borne in mind the reader will get confused. Thus Graham says in his book about hydatid of the lung: "In my experience when I found the ectocyst tough and thick, the hydatids were usually small and undergoing calcareous degenerations." Graham means by the ectocyst what we now call the adventitia.

In some lung hydatids that have come up to the surface and have grown out from the surface, it is probable that the projecting point is really ectocyst and that there is no adventitia present on the surface or if it is present, it is so thin that it could be distinguished only under the microscope. Lendon in fact says: "When the cyst abuts on the pleural cavity, its sac is thin and consists of pleural membranes only; or as I believe the ectocyst may project uncovered by pleura into the pleural cavity." The specimen which I have here from the Pathological Museum of the University, shows that there is practically no lung tissue over the surface of the hydatid cyst. In the actual space occupied by the cyst all lung structures of course have disappeared and the blood vessels are compressed, many of the vessels are destroyed and have been obliterated, but still in the wall of the adventitia vessels may very rarely actually stand out in relief. From these varicose pulmonary veins and from ulcerated arterial trunks we may get severe and very rarely fatal hæmorrhage. As soon as the operation is completed and the presence of the contained fluid is no longer existent, it is the rule that there is some oozing from ruptured capillaries and this may be shown by hæmoptysis and drainage from the cyst for some days after the operation.

I might mention in passing that in hydatids of the pleura an adventitia is as a rule absent, the serous membrane itself acting as a sac. In two cases of hydatid cyst of the pleura that I have operated on, there was a fair number of very small daughter cysts, very similar in appearance to the very small cysts that one finds in the hydatids of the vertebral canal; but while daughter cysts are found in lung hydatids, they are not nearly as common as in cysts found in other parts. One finds that quite a large cyst may contain but a few daughter cysts, in marked contrast to the thousands of cysts that one may encounter in hydatid cysts of the abdomen, especially in those cases where there is calcareous degeneration. It has been suggested by some observers that the parent hydatid forms daughter cysts only after rupture of the cyst wall. In support of this view I might remark that I once operated on a hydatid of the liver that had

been tapped ten years previously by Dr. Sydney Jones and Dr. Scot Skirving and a large quantity of fluid had been drawn off. When I operated on the cyst it contained more daughter cysts than I have ever seen before or since.

I believe that there are some observers in Australia who take the view that if you find daughter cysts in a lung hydatid, you may expect to find the cyst communicating with a hydatid cyst of the liver containing daughter cysts.

Symptoms and Signs.

And now let me say a few words about symptoms and signs.

In the first place it is a well known fact that a man may have a hydatid cyst as large as an orange or even larger in his lung and yet it may give rise to no symptoms whatever, while in the second place it is admitted that there is no one symptom that is pathognomonic of unruptured hydatid cyst of the lung. While a large cyst may not cause much trouble, there are some small cysts which cause the most distressing symptoms and in my experience this is especially true of the small cysts found at the base of the lung, a small cyst in this locality may make the patient's life a hell on earth. I operated once on a woman with one of these small cysts in the base of her lung after she had assured me she had coughed day and night for nine months. She lived in a small village not very far away from Sydney and after a bad week of coughing the local doctor called on her and begged her to go away, as he had no sleep for a week; he lived on the other side of the road and he could hear her coughing all night as he lay abed.

When the patient is giving you the history, he or she will generally bring some of the following points out prominently. Firstly, that he coughs, then secondly he spits up fluid, sometimes he spits up blood and he will tell you that he sometimes spits up pieces of membrane and lastly that he has attacks of difficulty in breathing. And when he tells you his tale and you look at him, you will note his "tucked up" appearance and in proportion to the emphasis he lays on his night cough, so much more will he look "tucked up." The continual coughing and the loss of sleep make him look very miserable. Of course you may think he has tuberculosis and it is for you to find out if he has or not.

And now what about pain? I think that a man may have quite a large hydatid cyst in his lung and yet have little or no pain. On the other hand he may have quite a small cyst and yet have much pain. Is the pain always situated at the site of the hydatid cyst? The answer is "not necessarily." Let me illustrate this by two cases. The first patient had a small cyst at the base of the lung and it caused great pain especially as the cough was very consistent. X ray examination revealed some pleuritic fluid about the base of the lung. In the other patient the hydatid cyst was high up about the third rib and yet all the pain was down at the base of the lung. The explanation of the pain at the base of the lung in these two cases is beyond doubt. The irritation due to the presence of the hydatid cyst had caused pleurisy and the outflowing of the pleuritic fluid had caused diaphragmatic irritation which had been the cause of the pain in both instances. Those of you who have had an extensive experience of pain in hydatid disease of the liver, will readily recall that you have encountered sometimes the most acute pain in cases of hydatid disease of the dome of the liver. I have known patients to endure the most exquisite pain which was stopped the moment the hydatid cyst was emptied and at the same time the small amount of pleuritic fluid was set free. In these cases the subjective features are much more in evidence than the objective features.

I have at present in the Lewisham Hospital a man who came to me from the country because for thirteen months he had suffered great pain at the base of the right lung. X ray examination showed that his diaphragm was fixed and the suggestion was that he might have a hydatid in the dome of his liver. The percussion note was very dull. I cut down on the seat of his trouble and found his diaphragm enormously thickened and quite rigid and in his liver a cavity filled with blood clot and pus. I emptied the cavity, but the contents showed no sign of hydatid. I opened also into his pleural cavity and let out a few ounces of fluid and his pain vanished the day after the operation.

As regards a bulging of the chest wall, that would only occur in very young subjects if the hydatid were very large.

As regards the spitting up of membrane, while a sure sign of hydatid cyst, it may yet turn out to be a sign of hydatid of the liver that has forced its way through into the lung. In one of my cases the patient spat up membrane and the cyst was situated in the diaphragm. I might here remark that while daughter cysts do occur in hydatid of the lung, the pieces of membrane that the patient spits up, are often not collapsed daughter cysts at all, but pieces of the ectocyst or endocyst. It is well to remember this, because in the last case that I operated on, the patient had spat up membrane for some months and did so for some days after the operation and as no daughter cysts were found at the time of operation, I began to wonder if there was another cyst somewhere containing daughter cysts that I had missed. However, she got well and did not spit any more.

Diagnosis.

The physical signs of hydatid of the lung are in some cases easily defined and one may be helped to a definite diagnosis by employing inspection, percussion and auscultation, provided that the cyst has certain dimensions. If, however, the cyst is as small as a hen's egg, X ray examination may help us more than anything else.

When we take a skiagram of a lung which contains a hydatid cyst, we often see the cyst very clearly, because the fluid is represented as a clear area. The density of hydatid cysts is considerable; the specific gravity of the fluid varies from 1,005 to 1,007. Then again the adventitia

and in some cases the ectocyst may be very dense and calcareous particles may be deposited in the adventitia which show up in the skiagram. Now the small cysts, provided they are not too small, may be earmarked by X rays; on the other hand, as the late Herschel Harris was wont to point out, it is the very large cyst that presents a difficulty, because the whole side of the thoracic cavity may be involved. Such cases cannot always be distinguished from a large pleuritic effusion. Recently a man was sent to me from the country suspected of having a large hydatid cyst of the left lung. X ray examination showed a very large quantity of fluid on one side and when I drew this off it measured 2.6 litres (ninety-five ounces). It was not hydatid, but pleuritic fluid and, being sure of this, I merely aspirated the fluid.

In one case in which a young man had a small hydatid cyst in the upper part of his lung, I jumped to the wrong conclusion after examining the skiagram and because it showed a considerable quantity of fluid at the base of the lung, I thought that this indicated the presence of a hydatid at the base of the lung. I opened him from the side low down near the midaxillary line and some ten ounces of fluid escaped and when I came to view the base of the lung there was no sign of any hydatid. Now I was absolutely certain that he had a hydatid, for he had been coughing up hydatid membrane for some months and had spat up blood and had some pain at the base. Where then was the cyst? I retraced the sides of the wound and inserted an electric light on a long, thin stem and inspected the front face of the lung. High up about the space between the third and fourth rib I came on a small white area. I marked the spot on the skin of the chest wall and reexamined the skiagram and then found that there was a small light spot in the skiagram at a place corresponding to the spot I had found by inspection with the electric light. I immediately removed a portion of the fourth rib in front close to the pericardium and came down on the hydatid. But one may ask why all the fluid at the base of the lung fifteen centimetres (six inches) away from the cyst? We know that with diaphragmatic pleurisy we do not get much fluid, the effusion is usually plastic, not serous. The fluid was explained when I cut into the cyst for out came half a teaspoonful of pus from the thickened cyst wall and this marked the site of the needle of the country medical attendant who had probably located the dull area by percussion. The presence of the pus had caused so much irritation that pleuritic fluid was poured out and it had run down to collect on the diaphragm which it had irritated; hence the pain and the fluid which had misled me.

The late Herschel Harris had had a very large radiographic experience of hydatid of the lung and he told me that he considered that MacCormick's sign, as he termed it, was an important one to look for in hydatid of the lung. It was first pointed out by Sir Alexander MacCormick that if a cyst of the lung be ruptured and some of the fluid contents escape and if a skiagram be taken of the cyst when the patient is in the upright position, the shadow will resemble that of a Dutch cheese with the top cut off, the horizontal part being uppermost; the upper line remains horizontal, no matter at what angle the patient may be tilted. Harris considered that air was always present in the cyst and had something to do with the appearance.

There is one condition occurring from time to time that will call for a differential diagnosis between hydatid cyst of the dome of the liver and hydatid of the base of the lung. For example here would be an instance. Lendon relates a case in which the percussion note from a liver hydatid cyst on the left side reached as high as the third rib in front and the tumour could be felt as low as the level of the umbilicus. The adventitia of such a hydatid may become incorporated with the diaphragm and the tissues of the base of the lung and the hydatid may burst into a bronchus and cysts may be expelled by the mouth, while the lung may even be flooded with fatal effect, as records show.

I do not propose to dwell further on the subject of diagnosis, because large hydatid cysts of the lung are not often met with now, just as large ovarian cysts are not allowed to grow up. The real fact is that there are so many operators on the watch that cysts do not get the chance of growth that they did thirty years ago. Personally, I now rely largely on the X rays for my final diagnosis aided by percussion. Of course the withdrawal of a hypodermic syringeful of clean gin-like fluid would at once clinch the diagnosis, but the use of the needle and syringe must be forbidden, because of the tragedies of the past and because of the danger of infecting the cyst.

The other subject that will always crop up in the diagnosis is tuberculosis. The expectoration and the blood spitting and the areas of dulness may all suggest tuberculosis. Tuberculin may help in such cases and the X rays may reveal the tuberculous cavities like craters in the moon.

Operative Treatment.

And now I come to the operative treatment. In the past the lung has been looked upon as a sacred organ that only the chosen few might touch; while if it contained a hydatid cyst it was labelled dangerous. Now there is some justification for these traditional beliefs, but I am glad to be able to say that they can now be swept away and one reason why they can be swept away is that the advent of the intratracheal method of anæsthesia has taken away the main danger for the surgeon. I can quite sympathize with the Victorian surgeon that I mentioned in the opening lines of this paper, because he said that he still operated on hydatid cysts of the lung in two stages. He was a careful man and he recognized the fact that to take out a rib and plunge a trocar into a cyst of the lung that may contain anything from half a litre to two litres of fluid, is just as dangerous a procedure with ordinary general anæsthesia today as it was thirty or forty years ago in the pioneer days of Thomas, Verco, Bird, Graham, Stirling and Lendon. These

men have all related hazards in the past and I can affirm that when a student at Prince Alfred Hospital, some thirty-five years ago, I have seen a man die a few minutes after a hypodermic needle had been pushed into a hydatid cyst of the lung. The meaning of this rapid, fatal termination in connexion with a hydatid cyst of the liver is not quite clear, but as regards the lung it is very clear. The needle enters the cyst and it not only causes a puncture in the endocyst, but it also causes a split in the endocyst wall. At once the fluid begins to escape in two ways. A small quantity comes out through the hollow needle, but far more rushes through the rent in the endocyst and the fluid then pushes the endocyst aside and finds its way between the adventitia and the ectocyst and goes on until it reaches the open mouth of a bronchial tube. Once the fluid is in the bronchial tube it floods the lung and if the patient be under an anæsthetic a fatal result may be the sequence. If, however, the patient is not under the influence of general anæsthesia, he may be able to cough and vomit the fluid and still survive, but if he is deeply narcosed he will probably smother. Graham tells us in his well known book about a patient in the Prince Alfred Hospital. He was seized with a sudden fit of coughing, accompanied by gulpings of mouthfuls of blood and fluid. He expectorated and coughed up a quart of hydatid fluid mixed with blood and he got quite well. On the other hand Humphry Marten, of Adelaide, reported a case where he says:

> I removed two inches of the fifth rib just inside the nipple line and having struck the cavity with an aspirator needle, I proceeded to open it. On doing this the patient immediately passed into a serious condition, his breathing became bad and his skin dusky, although the pulse remained fairly good. Improvement at first occurred, but in half an hour the patient died evidently from lung trouble as his pulse remained fairly good until the end.

Now having determined to operate the first point to be decided is the spot where the incision is to be made. I do not know how other surgeons come to a determination about this, but my way of reasoning is this.

I first of all know that the usual preconceived ideas about the size and the appearance of the human lung are generally quite wrong. I have made a diagram here to try and explain what I mean. On the right side I have depicted the lung as an organ which is distended and pink and which appears to be filling up one side of the pleural cavity. That, gentlemen, is the physician's idea of a lung and it is also the idea of the man who has had no experience of lung surgery. On the other side of the diagram I have depicted the left lung and that is the kind of organ that the surgeon is accustomed to see, when he has made his opening in the chest wall and let the air in. On looking through the aperture he does not encounter a pink distended lung filling up almost the whole cavity that physicians deal with, but to his surprise he sees a small solid blue-white body that looks as solid as a fresh ox tongue and this body certainly does not fill the cavity at all. In fact it looks as if it had shrunk away into one corner. This, gentlemen, is the organ that has been held in such respect by surgeons for these many years.

But let me go back to my first question and ask where is one to make this incision? Naturally, we are guided by what the skiagram shows us. If the hydatid cyst is obviously at the apex of the lung, then we must go for it through the front wall of the chest. If the cyst is half way between the apex and the base, still open through the front wall, but if the cyst is below the halfway mark, then it matters not whether the incision is made in the midaxillary line or behind, though my rule is to open it at the back, the lower the cyst is situated. And my reasons will become obvious, if we study the position of the anterior, the lateral and the posterior surfaces of the lung. The anterior surface comes down to say the level of the sixth rib in the nipple line; after that it slopes back so that in the midaxillary line it comes down to the eighth rib, while behind below the scapula it goes down as low as the tenth rib. Now while I think it is an advantage to attack the cysts if they are in the upper part of the lung through the front wall of the chest, those at the base may be attacked in the midaxillary line or at any spot behind below the lowest point of the scapula which comes down say to the seventh or eighth rib.

Briefly the details of the operation are these: The patient is given open ether and then the tube is passed down into the trachea. When fully under the anæsthetic he is turned into any position desired by the surgeon. I requested Dr. Lidwill to turn the last patient I operated on so that he would be flat on the table, chest downwards. I proposed to cut him about the ninth rib some five centimetres (two inches) from the middorsal line. I selected the spot in opposition to the spot chosen by the X ray expert, because the percussion note was so distinctly dull over the region that I was sure the cyst must be at this spot and as a matter of fact the incision was just over the cyst. As soon as the incision is made in the skin and muscles, gauze must be fixed to the edge of the wound and the rib is then removed and the pleural cavity opened. The next step is to try and locate the hydatid and this is done by inspection or by palpation. Fortunately for the surgeon there is often some indication on the surface that a cyst is below, because the surface exhibits a small white area. If there is no indication, then the fingers must be inserted and the cyst is often easily felt. If, for instance you are opening at the base of the lung, you must remember that the base is not after all very large in the collapsed lung and so a cyst the size of a hen's egg will not be far from the surface and can be easily felt. You have only to look at this specimen to see how the hydatid cysts fill the whole base of the lung and yet it is not a very large cyst and it would be very easy to palpate such a cyst during an operation. If of course the cyst were only the size of a pigeon's egg and it were in the centre of the lung, then you would not find it and what is more such a cyst would probably have

given rise to so few symptoms that you would not have been called on to operate on it. As I have just said if you cannot see the spot, you must rely on palpation and of course a lung with a cyst will feel very different to a normal lung. In one patient, when I was operating some years ago without Dr. Lidwill, I could not at first see any sign of the cyst. All that I could see from an opening in the mid-axillary line was a small solid looking body which jerked up violently every time the heart beat. It seemed incredible that this small solid organ that was being kicked about in this most disrespectful fashion by the heart could possibly be the awe-inspiring lung. When I put my fingers into the pleural cavity and caught the lung I could feel at once that the hydatid cyst was projecting on the anterior surface of the lung, while I had been looking down on to the posterior face.

The hydatid cyst having been located, the next step is to ask the anæsthetist to put on pressure and slowly the lung is brought up to you at the opening and all that you need to do is to transfix the ectocyst or adventitia or both, with a curved round needle carrying number three catgut which after being drawn through is handed to the assistant to hold. Another such is introduced and then you have complete command. The next step is to affix the adventitia to the edges of the wound. This is a wise precaution because if the fluid escapes and gets into the pleural cavity, scolices may cause future trouble. If you look at the specimen of lung hydatid of the sheep that I show you here, you will see that the whole surface of the endocyst is powdered with scolices. The adventitia having been secured to the edges of the incision, the surgeon must now work in conjunction with the anæsthetist who will tell you when he has sufficient pressure on and at that moment you will plunge your knife into the cyst wall and make an incision 2.5 centimetres (an inch) long. The next second the hydatid fluid is squirted over you and the next moment the endocyst is blown out through the incision. Here then ends the dreaded operation for hydatid cyst of the lung. It is impossible with the intratracheal method of anæsthesia when properly carried out for hydatid fluid to escape through the aperture in the endocyst and rush between the adventitia and the ectocyst and reach the open mouth of a bronchus. All this sort of thing is ended, provided the anæsthetist has used the proper pressure. The fluid cannot run back, it can go on only through the opening made by the surgeon in the wall of the cyst; so this bogey of the past may be said to have vanished for those who employ the intratracheal method, but the same real danger remains for those who employ the ordinary methods of general anæsthesia.

Having emptied the cyst of its fluid, endocyst and any daughter cysts present, we have now to decide on drainage and so we come to another bogey of the past. For over forty years it has been an almost universal rule that after opening a hydatid cyst of the liver or lung, a drainage tube had to be inserted. Up to this very day here in Australia this is the general practice. Men still persist in draining hydatid cysts both of the liver and lung. Now drainage in liver cyst is very seldom required, but it is always necessary to insert some form of drain in hydatid cysts of the lung. The only question that need be discussed is, will the drain be a rubber tube or a piece of gauze? My answer is that it does not matter and I always use a strip of plain gauze. This may be taken as an example of my prejudice against drainage tubes in general and particularly against drainage tubes in liver cysts. Fourteen years ago I determined to give up using drainage tubes in hydatid cysts of the liver and I am glad to say that I have not regretted it, for during these fourteen years I have not had a single death after operating on any hydatid cyst in any part of the body. If then a drainage tube is not necessary in a hydatid of the liver, why is it necessary in hydatid of the lung? Let me answer this question by telling you about a patient that I once operated on for hydatid cyst of the lung. Having emptied the cyst I secured the adventitious capsules to the lips of the incision and then closed the skin incision very accurately. When I returned the next day and viewed my patient I got the greatest shock I have ever experienced. I had left my patient a very handsome woman and I found her face distorted beyond all recognition. The air had been forced up by her persistent coughing, under the skin over her chest and up into her neck and this and her face were blown out and her eyes completely closed. I immediately took out some of the skin sutures and put in a piece of gauze so that the air could escape from the cyst cavity. After four days the emphysema had disappeared. Needless to say that cured me of treating lung cysts as I always treat liver cysts, without a drain and so after the operation I now place a packing of plain gauze in the emptied cyst cavity and this allows air to escape if the patient coughs. There is another reason for some form of drainage. As soon as the cyst is emptied and the adventitious capsule begins to contract, some capillary vessels burst and there is always some bleeding for two or three days. If the blood cannot escape out through the incision, the patient has to spit it up and this causes continuous coughing, which no doubt increases the hæmorrhage. The gauze absorbs the blood and allows it to drain out. In one of my patients after the operation the temperature and pulse rose during the first night and the temperature reached 39.4° C. (103° F.). I thought perhaps that this might have been connected with the very considerable amount of pressure Dr. Lidwill had put on to bring the cyst up to the incision. He did not think so and after forty-eight hours I removed the gauze and the temperature fell and everything went on well. Perhaps the presence of the gauze may have had something to do with the temperature or it may have been due to absorption.

The operation that I have described above, is a very simple affair, but there are times when it is not so easy, because the surgeon has not allowed himself enough room. He must take out more ribs or cut a window. I think the latter plan will be the better one, because in a patient who had a

lung hydatid from whom I removed pieces of two ribs some years ago, I found that she on more than one occasion had patches of emphysema surrounding the wound after persistent coughing.

There are two classes of cases that present difficulties. The first is the hydatid cyst that has burst spontaneously or has been tampered with and has been infected. That is the nasty one to deal with, but provided it can be located, it should be opened and drained in the same way as I have described above. The other cysts that will present difficulties are those with calcareous plates. Although I have found the adventitia quite thick in some hydatid cysts of the lung, I have not yet encountered any in which there was real calcareous degeneration, but of course, these have been frequently recorded. I think that one may be sure that calcareous degeneration is a sign of diminished vitality in the adventitious walls of the hydatid. Thomas says that the fibrous sac, that is the adventitia, like all similar growths tends with the advance of age to contract and become more dense and in doing so it will diminish the calibre of the vessels and by interfering with the circulation in its substance leads to calcareous degeneration. Now should one encounter a calcareous cyst in the lung what should one do? Should we open and leave it or should we remove the calcareous plates? From my experience of calcareous cysts in other parts of the body I am sure that if the calcareous matter is left behind, suppuration will occur and what is more that it will continue until all the calcareous matter is removed. I have had abundant evidence of this, because I have had a man in the Lewisham Hospital up to a few weeks ago whose abdomen and abdominal walls were full of calcareous hydatid cysts and I had to put him on the operation table, twenty-six times to dig oyster shells out of various portions of his abdomen. Now these operations taught me two lessons. The first was that if you open a calcareous hydatid, it often suppurates and the suppuration continues so long as the smallest portion of the calcareous plate remains in the cyst wall. The second lesson was that after the cyst had been emptied and one tried to dig the calcareous plate out, all went well for a time until suddenly there was a rush of blood. It would seem that at least at one spot there is always one large vessel in the pericyst and the moment that is ruptured the hæmorrhage may be quite alarming and the excavation has to be plugged with gauze and the patient left for a week. Now if the same thing holds good for calcareous cysts of the lung, then the surgeon who starts to remove a calcareous plate from a lung hydatid, is going to have a bad time from hæmorrhage and I would advise him to have a good supply of bismuth gauze on hand, so that he can pack the cavity, leave it for a week and then continue the operation.

In conclusion I would like to say that the day has gone by when the lung need any longer be held in awe, it is only a matter of cutting a window of sufficient size in the chest wall to enable you to operate on the lung as easily as any other part of the body. If we attack the lung in this spirit we shall soon master it. The key to that mastery, as I have just remarked, is free incision in the chest wall and the employment of intratracheal anæsthesia.

I should like to put it on record that Dr. Fiaschi, Junior, was the first to demonstrate to us how the lung could be removed ten years ago by using the intractracheal method of anæsthesia. He asked me to allow him to give this anæsthetic in a case of mine in which the patient was just on the edge of the grave and everything went well. Soon after this Dr. Lidwill joined the Lewisham Hospital staff and his wonderful ingenuity soon evolved from a few jam tins and a few pieces of gas piping an apparatus which I place after the rubber glove as the greatest help and advance in surgery in recent years.

Reports of Cases.

AN UNUSUAL CASE OF GENERAL PARESIS.

By CLIFFORD HENRY, M.B., Ch.M., D.P.,
Senior Medical Officer, Mental Hospital, Kenmore, New South Wales.

W.L.W. was admitted to Kenmore Mental Hospital on March 23, 1915, aged thirty-five years.

He was a single seafaring man born in Wales. His father was a heavy drinker.

He admitted having had syphilis, but no date was given. Ten months before admission he first noticed his symptoms, which consisted of hearing women's voices coming from the back of his head, which kept him awake at night. He became depressed and apathetic; he thought spirits went inside him and then ran away and laughed and mocked him. He thought that a woman brought him poison in a spoon. His speech was thick and slurred and his tongue was tremulous; there was syllable stumbling and elision of words. His reflexes were normal. His case was diagnosed provisionally as general paralysis of the insane.

On April 7, 1915, his cerebro-spinal fluid was examined. The cells numbered thirty per cubic millimetre and there was a large quantity of albumin. This was taken to confirm the diagnosis.

He worked fitfully and became an escapee; he made an unprovoked attack on a patient and was irritable if addressed. Later he settled down and helped in the ward until 1924, when he became disinclined to work.

On October 10, 1925, he complained of pain in the back and was put to bed. He rose at 4 a.m. on October 11 to urinate and spoke cheerfully to the night attendant. Shortly afterwards he died quietly in bed.

At the *post mortem* examination the cerebro-spinal fluid was found to be much increased in quantity. The brain was very large. There was definite chronic leptomeningitis and on the floor of the fourth ventricle there was hyperglíosis (so-called granulations) which one of the attendants spontaneously compared to sago grains. There was thus no possible doubt as to the diagnosis.

The descending aorta was the site of an aneurysm the size of the clenched fist, half in the thorax and half in the abdomen. This had ruptured into the right pleural cavity which contained the whole blood content of the body.

There are many atypical features in this case, the most outstanding being the long duration and the early diagnosis. He noticed his symptoms first in June, 1914, and died in October, 1925. This is therefore an authentic case of general paralysis of the insane of over eleven years' duration without remission. Textbooks give the average duration as two to three years, sometimes, but rarely, five years.

There were in this case no apoplectiform attacks nor fits of any kind, no weakness, wasting or contractures, no irregularity of the pupils, urinary troubles or wet and dirty bed-ridden stage and no destructiveness.

Mentally there was no delusion of grandeur, although the behaviour was at times maniacal. The brain was large with no atrophy of the cortex.

The clinical varieties given in the textbooks are (i.) the demented form, without excitement or depression; (ii.) the expansive form, with euphoria; (iii.) the maniacal form, with destructive and dangerous tendencies; (iv.) the depressed form, with hypochondriac delusions; (v.) the stuporose form, wet and dirty and stuporose; (vi.) the circular form, with alternations; (vii.) the convulsive form, with fits; (viii. and ix.) the female and juvenile forms.

This case differs widely from any of those given.

I would be much interested to hear from your correspondents of any authentic cases of longer duration and suggestions as to the possible cause of these atypical manifestations.

I have to thank the Inspector-General of Mental Hospitals for permission to publish these notes.

Reviews.

THE CEREBROSPINAL FLUID.

A USEFUL addition has been made to the literature on the cerebrospinal fluid by Greenfield and Carmichael.[1] Their work has no claims to originality, but being based on the authors' examinations of material for the National Hospital for the Paralysed and Epileptic and on a wide acquaintance with recent literature, the result represents a reliable presentation of present day knowledge of this subject.

The book is divided into three sections. Part I. deals with the "Nature and Composition of the Cerebrospinal Fluid and its Changes in Disease." Following a brief historical review, the authors describe the technique of lumbar, cisternal and ventricular puncture. They wisely repeat Ayer's advice that cisternal puncture should be practised on the cadaver. Anatomy and physiology are considered on conventional lines. The chorioid plexuses are regarded as selective filters and not as secretory glands, a view opposed to the authorities who attribute to the plexuses endocrine functions. It is interesting to find that the authors report examinations of ventricular fluid revealing no cells and only minute amounts of protein, raising the point that the abnormal constituents of cerebrospinal fluid are derived from other sources than the plexuses, that is to say, chiefly from meningeal vessels. The main channel of escape of the cerebrospinal fluid is by way of the arachnoidal villi of the Pacchionian granulations into the venous sinuses and not by way of the spinal perineural lymphatics, as used to be taught. How little is known of the functions of cerebrospinal fluid is shown in the dismissal of this subject in two paragraphs. The authors do not agree that cerebrospinal fluid has any importance in nourishing cerebral tissues, but consider that it acts as a water cushion and is a factor in the regulation of intracranial pressure.

The circulation of cerebrospinal fluid has been the subject of much research. The authors hold that the ventricular fluid passes by way of the foramina in the roof of the fourth ventricle into the subarachnoid spaces whence it is absorbed by the arachnoidal villi, the spinal cavity representing a dead end in which movement of fluid is at a minimum. These views are opposed to those of von Monakow, for instance, who considers there is a transcerebral passage of fluid from ventricles to subarachnoid space.

In Chapter III. are discussed the changes in pressure and appearance of the cerebrospinal fluid and its cytology and the following chapter deals with the chemical changes and attention is drawn to the fact that the estimation of total protein is usually neglected in examinations of fluid, the worker contenting himself with investigation of the globulin content. It is not uncommon to find a considerable increase of total protein with normal globulin content. Such a condition has its own diagnostic significance. The importance of other organic and inorganic constituents is indicated. The authors give a useful description of the cells met with in cerebrospinal fluid and indicate the inferences to be drawn from the various degrees and types of pleocytosis.

Under certain pathological conditions and especially in meningitis some substances are passed into the cerebrospinal fluid from the blood in excessive amount. This fact is the basis of a number of "permeability tests" which are described in Chapter V.

Following the accidental discovery of the colloidal gold reaction by Lange in 1912 many other colloidal reactions were introduced. The value and significance of these are discussed.

Chapter VI. is devoted to a critical consideration of Froin's Syndrome (xanthochromia).

In Part II. the authors describe in detail the characteristics of the cerebrospinal fluid in various inflammatory states, syphilis and other diseases affecting the central nervous system and conclude with a chapter on differential diagnosis on the basis of the cerebrospinal fluid findings. This section will be useful to the clinician who is often at a loss to determine the significance of changes in the cerebrospinal fluid.

In Part III. the authors describe the technique of examinations of cerebrospinal fluid, cell counting, preparation of films, estimation of organic and inorganic constituents and of the numerous colloidal reactions.

The final virtue of this little book is an extensive classified bibliography.

This is a work that should be at the hand of every neurologist and should be of considerable value to pathologists who are called upon to report on cerebrospinal fluid.

[1] "The Cerebro-Spinal Fluid in Clinical Diagnosis," by Godwin Greenfield, M.D., B.Sc., M.R.C.P. and E. Arnold Carmichael, M.B., Ch.B. 1925. London: Macmillan & Company, Limited. Demy 8vo., pp. x. + 272. Price: 12s. net.

OPTICAL EXAMINATIONS.

THERE can be no doubt that Mr. Lang's book on the examination of the eye forms an excellent and reliable summary of the subject.[1] The first fifty pages deal with external examination and the only statement to which exception may be taken is that the fibres in the seventh nerve supplying the *orbicularis* are derived from the third nucleus. According to Bishop Harman this is not so. In Part II. is described the subjective examination of vision, of colour vision, of fields of vision, of muscular balance and of various other conditions. The account of retinoscopy might well have been omitted; it is involved and difficult to follow. The beautiful geometrical proof given in Fuchs's book spoils the reader for anything else. There is some verbal jumble on page 71, line 25, beginning "and will therefore accept to see. . . ." The stereoscopic figure on page 92 gives a weird sensation when seen stereoscopically by fusing the central pair of double images. Part III. deals adequately with examination in the dark room. Examination with the slit lamp wisely in our opinion is omitted. Highly as we commend the subject matter of this book, we question the wisdom of teaching in this manner. A student might easily be dismayed at the formidable mass of detail presented, he is more interested and impressed by the demonstration of definite pathological conditions like acute iritis, a convergent squint or optic neuritis. Mechanical appliances and processes lend themselves badly to written description and five minutes' demonstration and practice with the actual instrument is more valuable than hours' reading about it.

[1] "The Routine Examination of the Eye," by Basil Lang, F.R.C.S. (England); 1925. London: Edward Arnold & Company. Crown 8vo., pp. 156. Price: 6s. net.

The Medical Journal of Australia

SATURDAY, JANUARY 2, 1926.

A Retrospect.

MANY years ago William Ewart Gladstone declaimed that "Time and Tide wait for no man." With the fleeting hour the year grown old passes and gives place to a new year, just as youth treading on the heels of age takes up the problems of the day and occupies the places that men but a brief time before held to be their own. The individual has his daily task to perform and a duty to fulfil. If he defaults, mankind is the poorer; if he succeeds, he must be satisfied with the knowledge that he has justified his existence, that he has earned the right to live. Soon he is forgotten, but he has contributed to progress. Nineteen hundred and twenty-five has ended and some advance has to be recorded in the medical world as in other sections of human endeavour. The year is but one in a long succession of years; the workers form but a group among countless other groups. May the achievements of the medical workers in the new year surpass those in any bygone year.

The Medical Profession in Australia.

The growth of the medical profession in the Commonwealth has been maintained during the year. Its recruiting ground has passed within recent years from the medical schools of the old country to our own Universities. Australia is becoming more and more self dependent and self reliant. Notwithstanding the vogue of decrying the manner, customs and achievements of the day, the members of the medical profession of the rising generation in Australia are at least equal in erudition, origination and ability to those whom they have followed. Their predecessors have set a high standard both from the scientific point of view and in ethics, but they are maintaining the dignity, honour and interests of their great profession in a manner worthy of recognition.

The British Medical Association.

The year 1925 will be remembered in the annals of the British Medical Association as one of great importance. The Association has changed its headquarters to a magnificent new home in Tavistock Square. The ceremony of the opening of the house was conducted with pomp and splendour. The Branches of the Association in Australia were ably represented by the Vice-Chairman of the Federal Committee, Dr. W. N. Robertson, C.B.E.; the President's chair now stands in the Council chamber as a reminder that in the outposts of Empire there are many staunch patriots who are zealously upholding traditions and guarding the bonds of kinsmanship.

The Victorian Branch has replaced the old Medical Society Hall by a fine, modern house with ample accommodation for the members and every facility for study and social intercourse. The house was officially opened in the presence of a large and representative gathering on May 20, 1925.

The scientific and medico-political work of the Branches and the coordinating activities of the Federal Committee have been continued and expanded during the year. The members are receiving assistance, protection and support in far greater measure than in the past and are indebted to their chosen representatives on the Councils and on the Federal Committee for honorary services of a very valuable and time absorbing nature.

The Universities.

Many changes have been witnessed in the Medical Faculties of our Universities. In the University of Sydney the Challis Professorship of Anatomy, rendered vacant by the premature and disastrous death of John Irvine Hunter, has been filled by Dr. A. N. St. G. H. Burkitt. A new chair of obstetrics was created in 1924 and early in the year 1925, Dr. J. C. Windeyer was appointed the first Professor of Obstetrics. This appointment, coming as it does at a time when the question of the safety of women in childbirth and of unborn and newly born infants is engaging the serious attention of the world, is one of very great moment. Professor Windeyer has been hard at work organizing his department and planning in a deliberate fashion a school of obstetrics of a high order of excellence.

Professor A. E. Mills has not sought reelection as Dean of the Faculty of Medicine in the University

of Sydney. He is about to visit Europe and has obtained leave of absence from the Senate of the University. Professor D. A. Welsh has been appointed Dean of the Faculty and Dr. S. A. Smith will serve as Acting Professor of Medicine during Professor Mills's absence.

In November, 1925, the Senate of the University appointed Professor A. Radcliffe-Brown, of Cape Town, the first occupant of the Chair of Anthropology. It is unnecessary to emphasize the significance of the creation of the first chair of anthropology in Australia or of the selection of a scientist of high standing to be the first Professor.

The curriculum has been modified to a very slight extent. For several years a complete and even revolutionary reform has been advocated by this journal, but hitherto conservatism and a somewhat timid attitude has prevailed and led to some half-hearted patching instead of deliberate and bold recasting.

The Cancer Research Committee has started on its campaign. Some admirable work has been achieved in a true scientific spirit. There has been no premature announcements of startling discoveries, no vain-glorious deductions from insufficient premisses. The investigations have been conducted quietly and with scientific caution and some highly interesting and significant observations have been made.

The Melbourne University has appointed Dr. R. Marshall Allan, M.C., Director of Obstetrical Research, a position of wide possibilities and great hope. This appointment has been rendered possible thanks to the generosity of the Trustees of the Edward Wilson (*Argus*) Fund. Early in the year Professor Peter MacCallum entered upon his duties as Professor of Pathology. He has gained many friends and supporters. The development of his school will be watched with interest. The establishment of chairs of medicine, of surgery and of preventive medicine is still being awaited.

In the University of Adelaide some minor changes have taken place, but here again the need for many drastic reforms is evident. The teaching of obstetrics is gradually assuming a sounder design. The authorities are using a large sum of money recently received for this purpose and to establish the Marks Lectureship in Physiology.

An important move has been made in the University of Brisbane. Appended to the new *Medical Act* are several clauses governing the founding of a school of normal and pathological anatomy. The provisions are largely permissive, but it is understood that advantage will be taken of them within a short time. When the anatomy department is founded, it will be merely a question of a few years before Queensland will possess a complete medical school.

Post-Graduate Work.

Post-graduate study in Australia is now firmly established. The Melbourne Permanent Committee for Post-Graduate Work organized a special course in obstetrics. Much care was expended on the preparation and a highly successful course was held in June. The November course in general medicine, surgery and the specialities was also well attended and was much appreciated by a large number of graduates.

Post-graduate courses have been held as usual in Sydney, a successful first course was conducted in Brisbane and there was one also in Adelaide.

It will be remembered that the Melbourne Permanent Committee offered a prize of one hundred and fifty guineas for the best essay on the causes and prevention of maternal morbidity and mortality. A number of competitors submitted essays. The prize was awarded in August to Dr. E. Sydney Morris, while essays by Dr. Marie Brown, Dr. Hubert Jacobs and Dr. Ellen Kent Hughes gained honourable mention. Dr. Morris's essay was published in our columns on September 12 and attracted a great deal of attention both within and without the medical profession.

Preventive Medicine.

The Royal Commission on Health appointed late in 1924 has made very extensive inquiries into practically every matter connected with the preservation of the public health. Much of the evidence taken in the several States has revealed an urgent need for fundamental reform in the legislative basis of public health administration and in the methods of administration. The taking of evidence was brought

to a close some weeks ago and the report of the Commissioners has just been published. It would be out of place to discuss the findings and recommendations of the Commissioners in this article. The text of the report will appear in this journal.

No further action has been adopted in connexion with the institution of a scheme of national health insurance and the provision of a system of medical benefit. A suggestion was made earlier in the year that the Federal Government was about to extend the reference of the Royal Commission on Health to enable it to recommend a system of medical benefit under a national health insurance scheme. Whether this proposal will be carried into action must depend on the policy of the Government in regard to the general insurance and on the attitude of the medical profession when definite proposals are made. It will be necessary to give any reasonable scheme very careful consideration. The Federal Committee has put forward the skeleton of a workable plan.

The Australasian Medical Congress (British Medical Association).

The second session of the Australasian Medical Congress (British Medical Association) will be held in the new Medical School buildings, Dunedin, in February, 1927. A strong executive committee has been appointed under the presidency of Professor L. E. Barnett, C.M.G., with Professor W. P. Gowland as Honorary General Secretary. Professor Barnett has recently passed through some of the capital cities of Australia on his way to England and has consulted with the leading practitioners in each State in regard to the subjects for discussion and other matters connected with the organization of the session. The officers of the sections and the local State secretaries have been appointed, provisional skeleton programmes have been drawn up and much preliminary work has already been achieved. It is obvious at this stage that a highly successful and instructive congress will be held. It is anticipated that Australian practitioners will attend the session in considerable numbers.

The Australasian Medical Publishing Company, Limited.

Early in February of the year the builders completed their task of erecting the new printing house in the Glebe and the work of installing the plant was begun. On March 21, 1925, the first issue of THE MEDICAL JOURNAL OF AUSTRALIA was printed by the Company's staff. In the issue of April 11, 1925, an illustrated article was published dealing with the history of the Company and including a description of the new house and its contents.

The early days of the new undertaking were anxious days. In order that the venture might be a success, it was essential that the staff and the machines should be fully occupied. An unknown firm cannot command contracts for printing at once. It was necessary to demonstrate that accurate and high-class work could be done. In addition to the printing of the journal and of the *Transactions of the Linnean Society of New South Wales* the Company had to be content with odd printing jobs of varying size and importance. The members of the medical profession lent their aid in a most loyal manner by ordering doctors' stationery. The quality of the work began to be recognized and the aim of the Company attracted the attention of the scientific world. Larger orders were received and executed, but it soon became apparent that a considerable time must elapse before the influence of vested interests could be overcome and the aim of the Company could be fully attained. The Company found one serious obstacle in the road. Scientific societies and scientists as a rule have a limited command of the wherewithal. While commercial institutions are prepared to pay for quality, scientific societies are more or less compelled to economize by demanding quantity. Notwithstanding these difficulties and the considerable expense of the establishment, there has been a steady increase in the amount of work and in the income. The first year is inevitably a financially bad one; it is impossible to show a profit at the start. Little by little the losses are being reduced and the prospects of financial success are improving. In addition it must not be forgotten that the Company possesses an asset in its property in Seamer and Arundel Streets which is increasing in value. The anxieties of the past year are giving place to a feeling of hopefulness for the near future.

THE MEDICAL JOURNAL OF AUSTRALIA wishes its readers a happy and prosperous year 1926.

Abstracts from Current Medical Literature.

MEDICINE.

General Paralysis of the Insane.

P. PAGINEZ (*La Presse Médicale*, May 30, 1925) discusses the treatment of general paralysis of the insane by inoculation with malarial parasites. The method was originated by Wagner in 1917 who had observed favourable effects produced in this disease after febrile diseases and after injections of tuberculin and antityphoid vaccine. The parasite of tertian fever (*Plasmodium vivax*) was used by Wagner and since 1917 by many others in Germany, England and America, with reported good results in 25% to 35% of the treated patients. The method is a drastic one and reduces the weight and strength of many patients. Subcutaneous injection of two to four cubic centimetres of blood from a patient suffering with tertian malaria is the most usual procedure. The blood need not be taken during a paroxysm of fever. After eight to twelve attacks of ague the malaria should be treated with quinine; in these circumstances quinine is a very effective remedy. Improvement in the condition of the nervous system does not usually follow immediately. The best results had been obtained in patients with a maniacal or expansive delirium, in the type of simple dementia the result has not been so good. Though some results appeared to have been withheld, there is no doubt that serious effects sometimes followed this treatment. Convulsions and death have been reported. There is also a possibility of the malaria being transmitted by mosquitoes to other patients.

Complement Fixation Reaction in Tuberculosis.

W. B. ALCOCK, M. DOUGLAS AND H. C. LUCEY (*The Lancet*, June 27, 1925) report some results obtained in the investigation of pulmonary complaints by the complement fixation reaction. Besredka's antigen was used. The patients examined suffered from a variety of disabilities caused by gun shot wounds, "gassing," influenza chronic bronchitis and so forth. The difficulties in the diagnosis of pulmonary tuberculosis are enhanced by the fact that the tubercle bacillus is found in only about 40% of conditions diagnosed clinically as pulmonary tuberculosis. In this investigation a fixation of complement with tubercle bacillus antigen was noted in 84·5% of 310 patients whose sputum contained tubercle bacilli at the time of the test and in 40·9% of 394 patients whose sputum had revealed the bacilli during the previous six years. The reaction was obtained in only 27·1% of 5,293 patients in whose sputum no bacilli were detected or concerning whose sputum no report was available. Besredka showed that a good antigen of human *Bacillus tuberculosis* is more satisfactory than a polyvalent antigen or mixture of human and bovine strains. It was found that a complement fixation was often obtained at one examination but not at another. The absence of a reaction with the serum of a patient with the clinical signs of tuberculosis should be regarded as an indication for a second test. The serum of thirty-six or 9.6% of 246 men in whose sputum tubercle bacilli were found, yielded a Wassermann reaction. The frequency of the Wassermann reaction was approximately the same as was found in unselected series of patients at general hospitals. There was thus no evidence that syphilis was more frequent in the patients suffering from tuberculosis. In about 6% to 9% the result of the complement fixation test was doubtful. These were classed as "borderline" results. A reaction was obtained in fifteen cases of renal tuberculosis, while there was no complement fixation with the serum of thirty patients with surgical affections without the signs and symptoms of tuberculosis. The authors claim that the complement fixation test in tuberculosis cannot be regarded as quite a specific test, but with improvements in technique, as was the case with the Wassermann test for syphilis, there is no reason why it should not eventually be as useful as that test.

Gall Bladder Disease.

H. ROLLESTON (*The Lancet*, June 6, 1925) publishes some notes on the ætiology and medical treatment of gall bladder disease. Inflammation of the gall bladder and cholelithiasis are so closely bound together that they are often indistinguishable clinically. There are two theories as to the causation of gall stones. The one is that local inflammation of the gall bladder leads to an increased formation and deposit of cholesterol which is cemented by calcium from the bilirubin. The other is that there is an increase in the cholesterol content of the blood and therefore of the bile, leading to a deposit of cholesterol which may be cemented by calcium when infection occurs. Cholesterol may occur in the blood from endogenous or exogenous sources. The organs richest in it are the central nervous system, the adrenal cortex and the *corpora lutea*, but the extent of its endogenous origin is uncertain. The exogenous sources are mainly brain and yolk of egg. Disorder of fat metabolism may lead to retention of cholesterol in the body. It is difficult to induce a permanent high percentage of cholesterol in the blood in normal persons. It seems that both the infective and metabolic courses are active in the causation of gall stones. Prophylaxis consists in removing any source of infection and administering hexamine; if sufficient potassium citrate be given to keep the urine alkaline, up to five and a half grammes of hexamine may be administered daily. It is said that bacteria in the gall bladder produce sufficient acid to liberate formaldehyde from hexamine. Foods rich in cholesterol should be restricted, including brain, yolk of egg and fats such as cream, butter, bacon, pork, stews, fried foods, goose, duck, liver, kidneys and sweetbreads; peas and beans are rich in phylocholesterol and should be avoided. Obesity should be guarded against by exercise and the avoidance of overeating. Olive oil may be beneficial by overoming the hyperchlorhydria accompanying the reflex gastric disturbance due to gall bladder irritation. Bile salts are the only certain chologogues; they can be given in a cachet or capsule. The taking of small quantities of food at frequent intervals leads to frequent evacuation of the gall bladder and may be helpful.

The Functions of the Gall Bladder.

M. CHIRAY AND I. PAVEL (*La Presse Médicale*, May 30, 1925) report the results of investigations into the normal functions of the gall bladder. An impression has become general that the gall bladder is a vestigial organ and that its removal can therefore cause no harm to the individual. The liver secretes 800 to 1,200 cubic centimetres of bile in twenty-four hours, but the whole amount of the bile does not pass through the gall bladder; a large part is discharged into the intestine direct after meals, a smaller part is collected and stored in the gall bladder in a concentrated form and is evacuated into the duodenum by the increased pressure caused by the contractions of the muscular coat. Tracings were obtained and in them two kinds of contractures were detected, one slow occurring every two hours, the other occurring every thirty seconds. Dogs were used to obtain the tracings. Similar results have been observed in tracings from human beings. The contractions occurred in all diameters; they were started by a reflex from the duodenum at the time of digestion and the bile stored between meals was thus forced into the intestine. The peptones, albumoses and the dilute hydrochloric acid of the gastric juice were the exciting elements in these duodenal reflexes. Little satisfactory evidence of free absorption from the gall bladder was adduced. From a study of the sections of the wall of the viscus there seems to be some absorption of fat and cholesterin. This, however, is a very minor rôle of the gall bladder. In addition to acting as a contractile reservoir for bile the gall bladder secretes mucus. There is no proof for the hypothesis that the gall bladder secretes an excito-secretory hormone. From their observations the authors are of opinion that the gall bladder is a useful organ and not merely a vestigial structure.

Chronic Carbon Monoxide Poisoning.

E. A. SHUMWAY (*The Medical Journal and Record*, June 3, 1925) describes the causes and symptoms of chronic carbon monoxide poisoning particularly that due to exhaust gases from automobiles. Acute poisoning arises from open charcoal or coal grates, illuminating gas, water gas, leaky chimneys or flues, gas stoves, blast and coke furnaces and gasoline engines, in addition to mine explo-

sions and fires, underground explosions and in tunnels as a result of gases from automobile exhausts or from coal or oil burning locomotives. In closed garages symptoms of poisoning and even death have arisen owing to exhaust gases from the engine when running. Sleepiness, weariness, headache and giddiness, confusion and unconsciousness are the main symptoms. Chronic carbon monoxide poisoning is less well known. Headaches, anorexia, redness of the eyelids, vertigo, nausea and gastric disturbances are common symptoms among traffic policemen and garagemen; many doctors have suffered from these symptoms owing to faulty exhaust pipes in closed cars. Even proximity to busy streets where ventilation is bad and living over a motor cycle store have caused incapacity. Other symptoms recorded are temporary amblyopia, ocular palsies, retrobulbar neuritis, lack of concentration, insomnia, delusions, irritability and severe anæmia. Exhaust gases of motor cars contained from 4% to 12% of carbon monoxide. In congested traffic in New York city the air becomes badly contaminated in this way and is a source of danger. One solution of the problem is to carry the exhaust pipes of motor cars vertically upwards at the back of the car. As regards garages ventilation should be secured and when people dwell over a garage, especial care should be taken to insure that fumes can not reach the dwelling rooms through the floor or by stairways.

Boils and Carbuncles.

G. E. PFAHLER (*Atlantic Medical Journal*, June, 1925) records his experience in the prevention and treatment of boils and carbuncles. His experience is mainly personal. He found that incision and fomentation do not shorten the attacks nor prevent recurrence. Treatment with autogenous vaccine has proved to be unsuccessful. X ray treatment relieves pain and hastens resolution, but does not prevent recurrence. Pfahler observed that boils occurred soon after the ingestion of any considerable amount of carbohydrate. He advocates the testing of urine and blood for sugar, a reduction of the carbohydrate intake to a minimum, the avoidance of sugar and sweets, removal of foci of infection, the application of tincture of iodine to the top of the lesion three or four times in an hour and massage of the affected area for five to ten minutes three or four times daily first with soap and then with mentholated vaseline. By such means he found that he could bring about the abortion of boils and carbuncles in himself and could prevent their recurrence.

Ætiology of Essential Hypertension.

E. KYLIN (*Klinische Wochenschrift*, April 23, 1925) states that essential hypertension is frequently a family disease and is seen especially between the ages of forty to sixty. The daily variation of pressure is abnormal. After sleep the pressure becomes normal, but may be 100 millimetres higher by evening. Intercurrent infections may lower the pressure to normal. The carbohydrate tolerance is greatly lowered, while the cholesterin and urea content of the blood are raised. The adrenalin test produces typical lowering and this is followed by a secondary rise which does not reach the original level. All patients suffer from the symptoms of vagotonia. The author considers that it is not a sharply defined disease, but a manifestation of disturbance of the vegetative system and should be treated similarly to gout, urticaria, asthma and so forth.

Tularæmia.

E. FRANCIS (*Annals of Clinical Medicine*, July, 1925) discusses tularæmia. This disease is essentially one which affects rabbits; small necrotic foci are found in the liver and spleen after death. Man becomes infected through the bite of a tick or blood-sucking insect. The disease is confined to the United States of America so far as is known. *Bacterium tularense* is the cause, a small bacillary or coccoidal organism, Gram negative, and growing only on coagulated egg yolk and cystine agar. Rabbit fever, deer fly fever and glandular type of tick fever are synonyms for tularæmia in rabbits. It occurs as a plague in rodents, there is bacteriæmia and transmission occurs by the rabbit tick or rabbit louse, neither of which bites man. Man is infected by the bite of the deer fly or the wood tick or by direct infection in handling infected rabbits. Rabbit hunters, cooks, rabbit marketers and laboratory workers have been infected. There are two types, the glandular with enlarged glands and the typhoid, without evident glandular enlargement. The incubation period is two to nine days. The onset is sudden with chills, malaise and fever, which lasts two to three weeks. Glands are affected only locally, sometimes the glands break down and discharge pus. Convalescence is slow and associated with great weakness. The blood serum agglutinates *Bacterium tularense* most strongly from the second to the fourth week. Only one second attack has occurred in two hundred cases. Treatment is symptomatic; the glands should not be incised unless they show evident signs of breaking down.

Paralysis Agitans.

W. FREEMAN (*Annals of Clinical Medicine*, August, 1925) reports the histological findings in a case of paralysis agitans (idiopathic) and two cases of postencephalitic Parkinsonism. Constant lesions have been described in the *globus pallidus* and in 1919 Trétiokoff described definite changes in the *substantia nigra*. Ferraro has shown that the axones of cells in the *substantia nigra* end almost exclusively in the lenticular nucleus. This fact might help to explain the occurrence of lesions in both these situations in paralysis agitans. In the cases under review the symptoms and signs were typical of the syndrome under discussion. *Post mortem* examination revealed in each case degeneration of the *substantia nigra*, the large pigmented cells being almost completely absent, nerve fibres being reduced in number and neuroglia being much increased. The changes in other parts were slight. Necropsy was performed, one, sixteen and sixty-nine hours after death respectively.

Pituitary Neoplasm.

J. H. PARDEE (*The Journal of the American Medical Association*, August 15, 1925) discusses the medical treatment of pituitary neoplasm. Glandular therapy and radio-therapy are of value and may render surgery unnecessary in some cases. The main symptoms are headache, pressure symptoms and biochemical or tissue disorder. Enlargement of the *sella turcica* is demonstrable. Benign enlargements may tend towards recovery; such enlargements may be of the nature of hyperplasia rather than neoplastic in nature. Nausea, vomiting, ocular defects, headache (intratemporal), obesity and menstrual disorders are the common complaints. Erosion of the clinoid processes is a common finding. In recent years the use of pituitary gland products in these cases has been favourably reported by a number of observers. Symptoms are often relieved and recovery not infrequently occurs. According to the nature of the physical signs, dessicated whole gland or/and anterior pituitary gland are given orally in doses of 0·6 or 0·3 gramme thrice daily. If there is no improvement pituitary extract is given in doses of 0·5 cubic centimetre by hypodermic injection daily or once or twice a week. Thyreoid gland 0·5 gramme *per diem* and *corpus luteum* 0·3 gramme three times a day are also given when the signs indicate a deficiency of these substances. Temporal and frontal radio-therapy up to twenty-five treatments are given in some cases in which the growth of the pituitary gland is rapid or excessive. Radio-therapy is given with benefit in some cases after removal of a pituitary adenoma by operation. Treatment by the above methods brings about recovery in many patients, even the partial blindness due to pituitary overgrowth being relieved. Destructive, rapidly growing neoplasms eventally require operation, benign adenomata, strumas or hyperplastic states are amenable to medical treatment as outlined.

Abdominal Symptoms Associated With Spinal Tuberculosis.

H. SCHNEIDER (*Wiener Medizinische Wochenschrift*, July 25, 1925) holds that symptoms referred to the abdomen may frequently be noted in cases of spinal tuberculosis. Many patients in the early stages are observed to complain of epigastric pain without vomiting. The gall bladder and appendix are also frequently blamed as the seat of the trouble. He considers that in any case of atypical abdominal pain the spinal column should be carefully examined.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, Adelaide Street, Brisbane, on October 2, 1925, DR. VAL. MCDOWALL, the President, in the chair.

Director of Obstetrical Research.

THE PRESIDENT congratulated Dr. R. Marshall Allan, M.C., on his appointment as Director of Obstetrical Research at the University of Melbourne.

DR. ALLAN replied.

Erythromelalgia.

DR. S. F. MCDONALD presented a man, aged forty-three years, who was suffering from erythromelalgia in an early stage. The patient had contracted malaria in North Queensland. He suffered from continuous attacks of pain in one foot and the pain became worse when the patient was in bed or when he allowed the foot to hang down. There was a red area over the ball of the great toe and of the second and third toes.

A Supernumerary Toe.

DR. F. C. BECHTEL showed the skiagram of the foot of a child in which double phalanges and an extra fifth metatarsal bone could be seen. Before the skiagram was taken Dr. Bechtel had considered that the supernumerary small toe was only a skin appendage.

DR. G. P. DIXON considered that the best treatment would be simple amputation of the little toe. If necessary the rudimentary metatarsal bone could be removed later, if it caused any trouble.

Workers' Compensation Insurance.

DR. NOEL C. K. LANE read a paper entitled: "Some Medical Aspects of Workers' Compensation Insurance" (see page 1).

DR. C. A. THELANDER said that when an injured worker had finished treatment the office often assessed him at the value of the permanent disability, overlooking the fact that during treatment he had been completely disabled. He had contested this ruling and had usually received satisfaction. He considered that Dr. Lane's views on traumatic hernia were sound. Acute pain at the onset was very characteristic. The contents of the hernia might not necessarily be bowel, but possibly omentum. He emphasized the great need for the members of the medical profession to give more attention to the treatment of fractures and thus to obviate much of the disability resulting from them. Dr. Lane had not mentioned nephritis which was frequently associated with plumbism. In the diagnosis of the condition raised blood pressure and any impairment of the renal function had to be considered as well as other symptoms, such as anæmia. Regarding varicocele it was feasible that as the result of a strain a preexisting varicocele might become painful from thrombosis. On the whole, however, the condition was rare. Orchitis was either filarial or more commonly gonorrhœal.

DR. A. C. F. HALFORD considered that Dr. Lane had approached the problem in a very common sense fashion. When a hernia appeared which was not congenital, it must be traumatic. Some physical strain was the prime cause of bowel entering a potential sac. Traumatic varicocele and hydrocele might be due to injury, but not to strain.

DR. S. F. MCDONALD stated that the condition of the patient was often fogged by the attitudes of the man himself, of the employer and of the insurance office. The history of events was often tinged by what the man wanted to be noted. There was no such thing as a healthy strained heart. It was remarkable the number of men who suffered from cardiac trouble and yet had no symptoms. The commonest symptoms were tachycardia and distress with intense anxiety. Many of the conditions were due to a mixture of fear and toxæmia, the latter arising from some mild illness such as influenza or incipient tuberculosis. Other patients gave a history of sudden precordial pain. The actual neurotic basis was very difficult to define. Regarding miner's phthisis the limited amount of expansion of a chest was very noticeable. In referring to one of the methods of diagnosis, the examination of the sputum for detection of quartz crystals, he mentioned that a man might have secreted some sand in his mouth prior to examination. In Germany blood examination was used as a routine in all cases of suspected lead poisoning. Anæmia and basophilia were noted long before other symptoms, such as colic.

DR. A. V. MEEHAN, referring to the question of returning to work after fractures, stated that the patient frequently felt that he would break down and have to return for further treatment. To enable him to regain confidence in himself, he considered that it would be useful to establish a gymnasium under skilled medical supervision. He did not agree with Dr. Lane's treatment of Colles's fracture, nor with his advocacy of early movement by the patient's friends. In the majority of cases there was a serious risk of redisplacement within fourteen days. Early movement was important, but it must be under the supervision of the medical man or a specially selected masseuse.

DR. E. S. MEYERS thanked Dr. Lane for the way in which he had always treated him as a general practitioner. He considered the State was getting too much for nothing out of the medical profession. He asked why there were so few consultations between the practitioners, consultants and the medical officers of the Department. He also wondered why so few forms regarding fitness for return to work were filled in by the practitioners concerned. He was in accord with Dr. Lane as regards direct hernia. It was often difficult to detect the cause of stiff backs. Biochemical tests were needed.

DR. G. P. DIXON was very pleased to see the figures regarding the time taken to resume work and also as regards malingering. He thought that a private patient returned to work much quicker than an insured one. He did not consider that Dr. Lane was justified in saying that hydrocele was not caused by strain.

DR. C. E. TUCKER considered that the attitude of the Department on the question of strained heart was not rational. The strain causing a man's cardiac condition might be spread over a considerable period. Why should the Department wait for a history of one definite example of strain?

DR. J. LOCKHART GIBSON mentioned that the Department had always been very fair in their attitude to eye cases. In cases of acute plumbism the ocular symptoms were due to increased intracranial pressure. Lumbar puncture would hasten improvement even in cases with no eye symptoms, especially those with peripheral neuritis which was due to increased intraspinal pressure.

DR. VAL MCDOWALL after congratulating Dr. Lane on his interesting paper, asked what was the procedure in regard to a person who had been paid a lump sum for a permanent disability and who returned with a further disability?

He also inquired as to the method of calculating the amount of disability.

DR. LANE in reply to the President stated that a case could be reviewed at any time. Persons with no permanent disability received no further compensation after having been returned as fit for work. Those with a permanent disability had the amount assessed according to a scale in the schedule. According to the Act all money paid out per week during treatment had to be deducted from the final lump sum paid to the insured person.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, 30-34, Elizabeth Street, Sydney, on September 24, 1925, DR. R. B. WADE, the President, in chair.

Hydatid of the Lung.

DR. W. J. STEWART MCKAY read a paper entitled: "Hydatid Cysts of the Lung and their Surgical Treatment" (see page 7).

DR. M. C. LIDWILL read a paper entitled: "Administration of Ether in Operations of the Lung" (see THE MEDICAL JOURNAL OF AUSTRALIA, December 19, 1925, page 698).

DR. J. G. EDWARDS showed some lantern slides of skiagrams of lung conditions. The series included several pictures of hydatid cysts of the lung. Dr. Edwards drew attention to the typical appearance produced and to the fact that hydatid cyst of the lung was not accompanied by displacement of the heart towards the opposite side. Dr. Edwards pointed out that the appearances seen in tuberculous cavities of the lung were essentially different to those produced by hydatid cysts. He showed a skiagram of a large tuberculous cavity in the right base and one in the right apex of a lung; the centre of the cavity was clear and was surrounded by a thickened margin. He also showed for diagnostic purposes a skiagram of an interlobar empyema on the right side. The lower margin of the shadow was sharply defined, but the upper margin was blurred owing to the presence of pleurisy.

Dr. Edwards expressed the opinion that the number of hydatid cysts of the lung encountered in surgical practice was diminishing. Ten years previously he had probably seen one a week, but since January, 1925, the number had been far less than this. In a recent survey of 8,800 tests undertaken for the Government in connexion with inquiry at Broken Hill and Sydney only one hydatid of the lung had been discovered. It was easy to take a skiagram of a hydatid cyst of the lung in the absence of fluid. If free fluid was present in the pleural cavity, it was better to drain the fluid by aspiration and to make the radiological examination within the next twenty-four hours.

It was not unusual to find patients with hydatid disease treated in sanatoria as suffering from tuberculosis. In fact he thought it would be a good idea to have an X ray survey made of all patients being treated in sanatoria for pulmonary tuberculosis. He had never seen a calcified hydatid cyst of the lung. In conclusion Dr. Edwards said that no information was available in regard to the rate of growth of hydatid cysts. He referred to one patient in whose chest there had been no evidence of hydatid cyst; yet twelve months later this patient's lung had contained a cyst 7.5 centimetres (three inches) in diameter.

DR. J. COLVIN STOREY, O.B.E., thanked the speakers for their remarks and said that he had been interested in hydatids ever since Professor Welsh had aroused his interest during his student days in an investigation then being made into the condition. Dr. Storey said that he had looked up the figures in connexion with hydatid disease of the lung treated at the Royal Prince Alfred Hospital during the previous fifteen years. Eighty-three cases were recorded in this series. He had examined the histories and was of the opinion that this number should be reduced to thirty-four. There were several reasons for this. In the first place several patients were admitted on more than one occasion and each admission was counted as a separate case. Secondly there were some errors in the cards and lastly in some instances the diagnosis had not been definitely established. He had included in the thirty-four only those patients who had been submitted to operation, who had coughed up portions of cysts or in connexion with whose condition pathological findings of hooklets or of ectocysts of a laminated character had been made. He had been taught eighteen years previously the same classification of structure that Dr. McKay had made that evening, namely, ectocyst, endocyst and an advenitious outer layer which arose as a result of irritation. Sir Alexander MacCormick taught that no daughter cysts were formed until after rupture of the parent cyst within the adventitia had occurred. Thus no daughter cysts were formed in hydatid disease of the lung unless the cyst had ruptured into the pleura.

Of the thirty-four patients treated at the Royal Prince Alfred Hospital during the period mentioned, sixteen had been females with an average age of twenty-eight and eighteen males with an average age of thirty-one. One female had been an old woman, aged seventy-three years. In regard to the situation of the cyst twelve had been in the right base, four in the upper lobe and one in the middle lobe on the right side. Nine had been situated in the lower lobe on the left side and one in the upper lobe. The situation of other cysts had not been definitely stated. Thirty cysts had been treated surgically. In one the needle only had been used and twenty-eight, as far as he could discover, had been drained. One cyst had been excised, but it had subsequently been necessary to reopen the wound. Four patients had been operated on under chloroform anæsthesia, thirteen under ether and twelve under ether given by the intratracheal method. One operation had been performed under local anæsthesia. Three deaths had occurred in the series. One of the patients who died, had been just previously subjected to an Estlander operation and had probably died of shock. A second patient had also suffered from pyosalpynx and Dr. Storey could not determine whether this condition or the hydatid lesion had caused death. The third patient had died from hæmorrhage after operation. No deaths had occurred on the table. Twenty-one patients had been reported as "cured," four as relieved and one as unrelieved. In his own practice he had had three cases. All the cysts had been large and in all three instances adhesion of the pleura had been present. In one instance the outcome had very nearly been tragic. The cyst had completely filled the right side of the chest and had pushed the mediastinum over to the left side. The patient had been anæsthetized by ether, but he had taken it badly. When brought into the operating theatre he had been quite blue and almost pulseless. Death had been imminent. In the circumstances Dr. Storey had had no hesitation in plunging a knife into the cyst between two ribs. He had held the ribs apart with his thumbs and had allowed the fluid to escape. The patient had subsequently recovered, but had retained a bronchial fistula. He had made no effort to close this fistula as the patient was quite comfortable.

The dangers of the operation were two, hæmorrhage and drowning. If the cyst were pressing on a large branch of the pulmonary artery and the pressure were removed, hæmorrhage might occur. On this account he was not satisfied that the use of the intratracheal method would always be advantageous. It might be safer if the lung were collapsed. He was glad to hear Dr. Lidwill say that there was no possibility of fluid escaping into the bronchi if an intratracheal pressure of twenty-five millimetres of mercury were used.

One aspect of hydatid disease on which he wished to lay stress was that of prophylaxis. He thought that fewer cases of hydatid disease were being seen partly because country surgeons were operating more frequently than formerly on affected individuals and partly because the water supply in the country districts had improved. He held that as the nature of the parasite and its life history were known, prevention of hydatid disease should be in a large measure possible. The public should be educated either by the press or by other means as to the way in which hydatid infestation occurred and they should be made aware of the danger of drinking water from possible sources of infection and of eating uncooked vegetables. In India during the war it had been the custom to soak uncooked vegetables in a weak solution of permanganate of potash as it had been found that treatment of this kind killed the vibrio of cholera. He had not the temerity to interfere very often in the culinary arrangements of his own household, but he insisted that uncooked vegetables should be treated in this way. He did not know whether this method would be effective as far as hydatid parasites were concerned, but he thought it quite likely that it would do good.

DR. JOHN MORTON thanked Dr. Stewart McKay for his valuable and opportune paper. There was no doubt in his mind as to the very great value of intratracheal method of producing anæsthesia and of immediate closure of the wound in operation for pulmonary hydatid.

It was interesting to note that in a fairly recent paper on hydatid of the lungs and pleura published in *Surgery, Gynecology and Obstetrics* (June, 1923) no mention had been made of these two most essential features in the operative treatment.

His attention had first been drawn to the possibility of immediate closure through the report of a case by Dr. Corlette some years previously. Since that time he had adopted the method with very gratifying results. Instead of having to undergo a long convalescence the patient was usually quite well in a week or two.

In regard to daughter cysts and calcification of the cyst these were rarely seen. He did not think that the explanation given for the absence of daughter cysts in the lung was the correct one. He thought the formation of daughter cysts was dependent on the age of the parent cyst. When the cyst was mature it would produce daughter cysts in the lung just the same as in any other organ. Hydatid cysts of the lung however, did not often live long enough; their surroundings were such that early rupture and emptying occurred. There was no time for daughter cysts to form. In the same way calcification was a late development and for this reason it was not seen.

After closure of the operation wound drainage took place through the bronchial tubes and trachea. Moreover, the cavity in the lung was not readily infected. The ciliated lining of the air passages served to filter the air and keep it sterile. This had been shown in the treatment of bullet wound of the chest during the war.

If the wound were left alone usually no infection occurred, if opened up there would be great danger of infection from the surface.

In regard to the technique of the operation he thought that after the chest was opened and the lung fully inflated the parietal and visceral layers of pleura should be securely fixed by sutures. The opening into the cyst should also be sutured after removal of the endocyst. Sutures could be used in such a manner that neither emphysema nor pneumothorax would result.

The temperature often rose to an alarming degree after the operation. This rise meant nothing; it subsided in a day or two and was attended by no ill effects.

The principle of closing the pleura and the chest wall could be utilized with advantage in dealing with empyema.

He had been told of the possibilities of this procedure and had been practising it of late with good results. After a careful removal of coagulum with sponge forceps the wound was closed completely in layers or with the addition of a rubber tissue drain only, the idea being to avoid mixed infection and to get early expansion of the lung.

He considered Dr. Lidwill's suggestion—that intratracheal anæsthesia should be used in exploring the lung for a bronchiectatic cavity—to be of great practical value.

DR. E. M. HUMPHERY in discussing the question of daughter cysts referred to a specimen in the Medical School of the University of Sydney. In the body of a female aboriginal which had been prepared in serial sections, a hydatid cyst of the heart was present. The cyst was tightly packed with daughter cysts. Dr. Humphery thought that this showed that age had something to do with the development of the latter, because, since the cyst had been surrounded by firm muscular tissue it could not expand. This would cause symptoms at an earlier stage, probably before the formation of daughter cysts, than would have been the case had it been surrounded only by thin lung tissue.

When in practice in the North Coast district of New South Wales some years previously he had seen a relatively large number of patients suffering from hydatid disease. Many people then had been in the habit of eating water cress from the creeks. This was a very dangerous habit, unless the leaves were thoroughly washed as owing to their crumpled shape they made excellent resting places for the ova. In this district practically all the patients gave a history of having eaten freely of water cress just as it was gathered. In conclusion Dr. Humphery expressed the opinion that the members of the community were becoming more educated in regard to matters of health and that more care was exercised in the preparation of foodstuffs.

DR. C. E. CORLETTE discussed the question of daughter cyst formation and said that another explanation of the absence of daughter cysts in the lung should be borne in mind. It was commonly held that cysts in the human lung did not contain scolices, such cysts were called acephalocysts. He could not verify this statment, but it had been held to be true by so many eminent observers that it should be accepted until someone proved it to be wrong. He was interested in several other points that had been mentioned. In a paper published in March, 1919, he had advocated closing of the chest after evacuation of a hydatid cyst. He had thought it safe to do this and had not feared regeneration because he had thought that the cyst was sterile as without scolices it could not reproduce. In regard to the method of operating he was in accord with Dr. Stewart McKay to a large extent. He had operated on a considerable number of patients for this affection. He always put the patient in a semi-prone position near the edge of the table with the affected side downwards. The patient's arm on the affected side was extended over the head. Dr. Corlette said that he sat down to perform the operation and made his incision at right angles to the vertebral column. In this way he made an oblique cut across the longitudinal axes of several ribs. He could then choose one, two or three ribs without further trouble. When he had cut through the skin and the superficial fascia down to the muscle, he dissected the skin and fat away from the muscles. Instead of cutting the *latissimus dorsi* muscle he split its fibres or pushed the margin of the muscle back. After this he could make a large opening and could remove portions of three ribs quite easily. The periosteum of the ribs should be separated and the vessels and nerves need not and should not be cut. If the chest was to be closed, the patient was left in a condition which would produce a more satisfactory convalescence. In a chest operation the fewer the muscles cut, the less the distress of the patient afterwards. Many other surgeons had emphasized the same point.

In regard to anæsthesia he preferred to have ether given by the intratracheal method for operations on hydatids of the lung. He was not prepared to say that it was best for empyemata. He had found nothing to equal local anæsthesia for the latter condition. By local anæsthesia he meant not merely a local anæsthetic, but something in addition which would blanch the tissues. The patient was conscious all the time, the tissues could be seen clearly and a much more satisfactory result could be obtained. In regard to ether pneumonia he was very inclined to agree with Dr. Lidwill. They had been accustomed to put the lung condition down to ether. He was very doubtful. It was remarkable that the lesion appeared in the lung not only after ether had been administered, but also after the use of chloroform and even after local anæsthetics had been employed. In these circumstances it was time to look for another explanation. He had also seen the peculiar rise of temperature after operations on hydatid cysts of the lung. He did not know the explanation. It was a peculiarity of the disease.

DR. ARCHIE ASPINALL thanked Dr. Stewart McKay for his paper. It was one of the kind that was needed. He referred to the statistics of patients admitted to Sydney Hospital with hydatid cysts of the lung during the previous ten years. Of this number ten had been reported as "cured," thirteen as relieved and one had died. During the previous three years the cases had numbered eleven.

His house surgeon, Dr. McIndoe, had supplied the statistics, but a careful analysis of the cases had not been made owing to the difficulty of looking up the notes under the old system of keeping records.

Of these patients three had been "cured," six relieved, one unrelieved and one had died. The three reported "cured" were the only ones of this series operated on. The patients' ages had varied from twenty-five to fifty-five and the average had been twenty-eight. Nine of the patients had come from the country and no record had been made of the place of abode of the other two. Removal of the hydatid without drainage had been carried out in three instances and all three patients had been cured. The initial symptoms had been cough in three patients, pain in one, hæmoptysis in five, spitting up of membrane in one and asthenia in one. Secondary symptoms had been cough in four instances, hæmoptysis in seven, spitting up of membrane in four, pain in five, pleurisy in three,

dyspnœa in one, loss of weight in three and asthenia in one. Of the signs found on examination anæmia had been found in one patient, diminished expansion in five, diminished vocal fremitus in three, dulness in ten, diminished breath sounds in four, diminished vocal resonance in six, increased vocal resonance in one, tubular breathing in two, friction rub in two and dislocation of the apex beat in one. The cyst had been situated in the right apex in two instances, in the middle lobe in two, in the right base in two, in the hilum in one, in the left apex in one and in the left base in two. In one the location of the cyst had been indefinite. In four instances the cyst had been located by means of X rays, in five the report had been "negative" and in two instances the report had been indefinite (the report had been to the effect that something was present which was either a hydatid or some other condition). In nine examinations of the blood eosinophilia had been found in three instances and not in six. The Casoni test had been carried out in four instances, but no reaction had been obtained. The complement deviation test had been carried out in six instances and a reaction had been obtained on three occasions. The precipitin test had been carried out four times and one reaction had been obtained.

Dr. Aspinall said that apart from the cases he had seen when assistant to Sir Herbert Maitland at Sydney Hospital his own experience was limited to three patients operated on by himself. In the first no trouble had been encountered. The second patient had suffered from a cyst of the right base and the operation had been followed by surgical emphysema which strange to say had been most pronounced on the opposite side, but did not cause anxiety and had disappeared in a few days. Dr. Aspinall's third case was that of a patient whom he had operated on for Dr. Stokes. Dr. Stokes intended to report the case in full at a later date. In this instance it was noteworthy that the heart had been displaced to the opposite side. He was not quite sure of the safety of closing the pleura completely, although his results in the three cases had been excellent.

In regard to the question of anæsthesia Dr. Aspinall agreed that the intratracheal method was most safe. At the same time he confessed to a prejudice against the use of "Kelene" for the purposes of induction; when it was used ether administration had to be pushed from the beginning, the patient often secreted much mucus and complete muscular relaxation did not occur for some time. This was a disadvantage in abdominal work. He thought the drop method of induction was better, although perhaps not so pleasant for the patient.

By a careful slow induction ether did not cause irritation to the respiratory passages and the administration of morphine and atropine was unnecessary. A few drops of oil of bitter orange on the mask completely disguised the smell of ether. From the surgeon's point of view the knowledge that the patient was having ether alone and not a combination of drugs was a comfort in difficult cases.

DR. SYDNEY JONES said that he spoke as a mere physician. He thought that Dr. Stewart McKay's paper was remarkable for its lucidity and for the clear way in which he marshalled his facts. He objected to Dr. McKay's description of the phycisian's idea of the lung and said that what the surgeon saw was a collapsed lung. He asked Dr. Lidwill how he decided whether a patient required a pressure of twenty-five or forty millimetres of mercury. He thought that ethyl chloride was an added danger. If a few drops of bitter orange were placed on the mask before induction ether could be given without causing the patient any unpleasantness. He wished to suggest that there was such a thing as ether pneumonia, but thought that it would not occur if the ether was warmed before use.

DR. R. B. WADE said that they were indebted to both speakers for their valuable papers and for their excellent methods of presentation. A paper on lung surgery was very timely, for surgery of this region had for many years been the Cinderella of surgical practice. He asked Dr. Stewart McKay whether he had encountered any cases of severe hæmorrhage when operating on hydatid cysts of the lung.

DR. STEWART MCKAY in reply said that fatal cases of hæmorrhage had been recorded after operation. An explanation sometimes given for this was that a varicose condition of the veins developed in the walls of the cyst. Verco in his article in Allbutt's "System of Medicine," however, had rather opposed this view. He thought that in cases of severe hæmorrhage this might be the explanation. He had not encountered severe hæmorrhage, but at the same time he always expected the patient to spit up a certain amount of blood. For this reason it was an advantage to drain the cavity for three or four days. If blood was allowed to collect in the cavity and to remain there for two or three days, it gave rise to cough and the cough might cause further hæmorrhage. In regard to Dr. Lidwill's remarks on ether pneumonia he had discussed the question with Mr. W. J. Mayo while he was in Australia. Mr. Mayo expressed the opinion that ether had very little to do with it. He (Mr. Mayo) thought that pneumonia would not occur unless there was a focus of infection in some part of the body. Oral sepsis in the form of pyorrhœa was a potent cause and Dr. McKay referred to a case mentioned by him in a recent discussion in which a patient died from pneumonia caused by this means. He thought that the teeth of all patients should be examined with care before any surgical operation was undertaken under general anæsthesia. He agreed that sufficient care was often not taken to protect the patient from chill while he was on the operating table. One thin blanket over him was not sufficient. In regard to Dr. Morton's remarks on the age of the cyst he did not think that the matter could be decided just then. He thought that Mr. Harold Dew would soon elucidate the question. Daughter cysts probably formed when the parent cyst was old and dying. Daughter cysts did form in the lung, but not very often. It had been suggested that scolices were not formed in hydatid cysts in the lungs of human beings. They did form in the sheep's lung. In regard to the question of drainage he pointed out that in some instances no opening into the bronchus existed and there was no occasion to drain the cavity, nor was it necessary to drain cysts of the pleural cavity.

DR. LIDWILL in his reply referred to the question of exogenously budding hydatid. He had seen an instance of this in the upper lobe of the right lung and he thought that this proved that hydatid of the lung would give off daughter cysts. He had previously practised for many years at Strathfield and had seen many cases of hydatid infestation in men employed at the Sale Yards at Flemington. He thought that it was quite likely that these men swallowed the ova with the dust in which they worked. In regard to Dr. Aspinall's remarks about ethyl chloride and ether he had used the combination five or six thousand times and had experienced no trouble. Induction generally took two and a half to three minutes and was not troubled with the presence of froth and mucus. If ethyl chloride was pushed too far, the anæsthetist would get into trouble and the patient might collapse. The ether should be turned on as soon as the patient was unable to answer questions. In regard to the question of empyema he had not given an anæsthetic for this condition for many years. He thought that it would probably not be safe to use the intratracheal method.

MEDICO-POLITICAL.

THE following have been appointed office-bearers and members of the Council of the Victorian Branch of the British Medical Association:

President: Dr. H. Douglas Stephens.
Vice-Presidents: Dr. R. J. Bull, Dr. J. Newman Morris.
Chairman of Committees: Dr. J. Newman Morris.
Honorary Treasurer: Dr. C. H. Mollison.
Honorary Secretary: Dr. F. L. Davies.
Honorary Librarians: Dr. W. G. D. Upjohn, O.B.E., Dr. R. H. Fetherston.
Representatives on the Federal Committee: Sir George A. Syme, Dr. R. H. Fetherston.

Additional Members of Council: Dr. J. H. Pestell, Dr. F. E. McAree, Dr. G. Weigall, Dr. D. Rosenberg, Dr. A. E. Ffrost, Dr. F. J. Bonnin, Dr. P. V. Langmore.

Coopted Members of Council: Dr. D. G. Robertson, Dr. C. Gordon Shaw, Sir James Barrett, K.B.E., C.B., C.M.G.

Organization Subcommittee: Dr. Allan Robertson, Sir James Barrett, Dr. F. E. McAree, Dr. J. H. Pestell, Dr. B. M. Sutherland, Dr. W. Summons, Dr. J. F. Wilkinson, Dr. D. Rosenberg, Dr. D. G. Robertson, Dr. G. Weigall.

Ethical Subcommittee: Dr. A. L. Kenny, Dr. A. V. M. Anderson, Dr. L. S. Latham, Dr. W. Summons, Dr. B. M. Sutherland, Sir George Syme, Dr. W. G. D. Upjohn, Dr. J. W. Dunbar Hooper, Dr. Fay Maclure, Dr. C. Gordon Shaw.

Legislative Subcommittee: Dr. D. Rosenberg, Dr. A. L. Kenny, Sir George Syme, Dr. Victor Hurley, Dr. R. M. Downes, Dr. R. H. Fetherston, Dr. B. Zwar, Dr. D. G. Robertson, Dr. W. J. Penfold, the Honourable S. S. Argyle.

House Subcommittee: Dr. C. H. Mollison, Dr. R. H. Fetherston.

Scientific Subcommittee: Dr. R. Fowler, Dr. Victor Hurley, Dr. K. Hiller, Dr. Fay Maclure, Dr. C. H. Kellaway, Dr. W. G. D. Upjohn, Dr. W. J. Penfold, Dr. C. Gordon Shaw.

Medical Agency Subcommittee: Dr. W. Kent Hughes, Dr. R. M. Downes, Dr. C. H. Mollison, Dr. W. G. D. Upjohn, Dr. R. H. Fetherston.

Library Subcommittee: Dr. W. G. D. Upjohn, Dr. R. H. Fetherston.

National Insurance Subcommittee: Dr. J. Newman Morris, Dr. J. Ramsay Webb, Dr. W. R. Boyd, Dr. R. H. Fetherston, Dr. D. Rosenberg, Dr. W. G. D. Upjohn, Sir George Syme and the members of the Organization Subcommittee.

The Council of the Victorian Branch has made the following appointments:

Bush Nursing Association: Dr. B. M. Sutherland, Dr. A. L. Kenny.

Advisory Board to the Medical Inspector of Schools: Dr. B. T. Zwar.

Free Kindergarten Union: Dr. W. Kent Hughes.

Executive Council of the Victorian Baby Health Centres: Dr. W. G. D. Upjohn, Dr. R. M. Downes.

Society for Combating Venereal Diseases: Dr. R. H. Fetherston, Dr. R. Fowler, Dr. J. W. Dunbar Hooper, Dr. Fay Maclure, Sir George Syme, Dr. D. G. Robertson, Dr. G. Weigall.

Nurses' Board: Dr. B. T. Zwar.

Melbourne Permanent Committee for Post-Graduate Work: Dr. A. V. M. Anderson, Dr. J. W. Dunbar Hooper.

Executive of the Melbourne University Association: Dr. W. G. D. Upjohn.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected members of the Victorian Branch of the British Medical Association:

Stoneham, Enid Stephanie, M.B., B.S., 1925 (Univ. Melbourne), 36, Mayston Street, Upper Hawthorn.

Horton, Laurance Seymour, M.B., B.S., 1925 (Univ. Melbourne), 18, Kerford Road, Albert Park.

Lillie, Geoffrey James, M.B., B.S., 1925 (Univ. Melbourne), Alfred Hospital.

THE undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

Duggle, Richard Irving, L.R.C.P., L.R.C.S., 1919 (Edinburgh), L.F.P.S., 1919 (Glasgow), 110, Northcote Street, Naremburn.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A MEETING OF THE SENATE OF THE UNIVERSITY OF SYDNEY was held on December 14, 1925.

The Deputy Chancellor on behalf of the Fellows present welcomed Professor D. A. Welsh (Dean of the Faculty of Medicine).

Professor A. E. Mills, formerly Dean of the Faculty of Medicine, has been granted leave to proceed abroad in 1926. Dr. S. A. Smith will be Acting Professor of Medicine in 1926.

Owing to the good offices of the representatives of the Rockefeller Foundation, Professor Radcliffe-Brown, who is to occupy the Chair of Anthropology, will be given an opportunity of visiting Great Britain and America before coming to Sydney. The Foundation has agreed to pay all expenses incurred in Professor Brown's visit to England and to America.

A message was received from Professor David that the Government of Western Australia had agreed to contribute a quota of the expenses entailed in the maintenance of the Department of Anthropology.

The following appointments were made:

Drs. W. G. Armstrong and F. M. Suckling as Examiners for the diploma in Public Health.

The following regulations for the award of Doctorate Degrees were, on the recommendation of the Professorial Board, approved:

Regulations for the Degree of Doctor in any Faculty.

(i.) The degree of doctor shall not be granted until at least eight years have elapsed since the candidate's matriculation and entrance into the faculty in which he desires to obtain the doctorate, and until at least two years have elapsed from the time of his obtaining his first degree in the faculty.

(ii.) The degree of doctor may be granted by the Senate on the recommendation of the faculty for an original contribution of distinguished merit adding to the knowledge or understanding of any subject with which the faculty is directly concerned, but shall not be granted for merely professional skill.

(iii.) The candidate shall present a thesis which has not been presented before for any degree. The candidate may be examined in the subject of the thesis or in any branch of knowledge with which, in the opinion of the faculty, the thesis is connected. The candidate shall not be recommended for the degree unless the examiners report that the thesis fulfils the conditions laid down in the preceding regulation and that the thesis is of sufficient merit.

The thesis as a whole or such portion or epitome of it as is approved by the Vice-Chancellor and the Dean of the Faculty, in consultation with the other examiners, shall within a period of eighteen months, be published or accepted for publication in some recognized journal, or be published in his own name privately by the candidate, unless, on account of special circumstances, exemption is granted by the faculty. The candidate may present other papers in support of his candidature.

The thesis shall be a record of original research undertaken by the candidate, with all references to his indebtedness set forth and shall be accompanied by a declaration signed by him that the work has been done and the thesis composed by himself.

(iv.) Unless the candidate has obtained a junior degree with honours in the faculty, he shall be required to pass such qualifying examination as the faculty may, in the circumstances, deem proper and if the by-laws of any faculty so provide, the candidate may also be required to pass an examination in such subjects as may from time to time be prescribed, provided that if eight (8) years have elapsed since he obtained his junior degree, and if his thesis be reported by the examiners to be of outstanding merit, a candidate who has obtained his junior degree without honours, may, on the recommendation of the examiners, if approved by the Professorial Board, be excused from other examination than on the subject of his

thesis or any branch of knowledge with which the thesis is connected.

(This regulation does not apply to the Faculty of Medicine.)

(v.) The examiners shall be three in number, namely a professor of the faculty and two other examiners, of whom one at least, unless the Senate otherwise directs, shall be an external examiner approved by the Senate on the recommendation of the faculty.

(vi.) In any faculty in which there is the degree of master, the by-laws of the faculty shall state whether that degree is or is not a necessary preliminary to the degree of doctor.

(vii.) The date of the examinations for the degree of doctor shall be in Michaelmas Term, unless at the discretion of the Dean of the Faculty another date be permitted, and candidates must apply for admission to the examination not later than 31st of August.

(viii.) Five printed or typewritten copies of the thesis shall be in the hands of the Registrar at the time when application for admission to the examination is made.

(ix.) The fee for the degree of doctor shall be £20 and shall be paid to the Registrar at the date of application.

An invitation was received from the Director of Antiquities, Government of Palestine, to the University to send delegates to an Archæological Congress in Syria and in Palestine from April 2 to 23, 1926. It was resolved to thank the Director for the cordial invitation and to inform him that it was not possible to appoint delegates for the time.

A letter was received from the Dean of the Faculty of Medicine regarding his honorary position on the staff of the Royal Prince Alfred Hospital. It was resolved to recommend to the Conjoint Board that Professor Welsh, in view of his position as Dean of the Faculty of Medicine, be appointed as Honorary Consulting Pathologist to the Hospital.

On the recommendation of the Cancer Research Committee, Miss W. R. Mankin, B.Sc., and Miss P. V. Holt, B.Sc., were appointed to carry out research work in biochemistry.

Congress Notes.

AUSTRALASIAN MEDICAL CONGRESS (BRITISH MEDICAL ASSOCIATION).

Travelling Facilities.

IT has come to the notice of the Executive Committee of the Second Session of the Australasian Medical Congress (British Medical Association), Dunedin, 1927, that several prospective visitors to Congress have been inquiring whether there would be a special boat to bring Australian visitors to New Zealand. This matter was considered some months ago and the proposal was put officially to the various Branches of the British Medical Association in Australia. The practically unanimous opinion was against the proposal which was in consequence dropped.

It is hoped shortly to publish some information as to fishing facilities for visitors.

Correspondence.

DICHOTOMY.

SIR: One cannot help feeling somewhat sorry for your correspondent "Inquirer." He has been so well and truly jumped on and can now hide his diminished head.

Of course it is wrong for a country practitioner to accept a fee for an operation at which he is not even present, much less assisting. It is degrading to him who offers and to him who takes, and must cause loss of self-respect on both sides. But there is another aspect of the matter. What about the man who lives in town and does no big surgery? For one wealthy patient this man has there will be a score of smaller fry who can pay a moderate fee and no more. These people will make strenuous and praiseworthy efforts to keep out of the public hospitals and it is right and fair that the doctors should meet them and adjust their fees to circumstances.

We will suppose such a one can pay a fee of £30. Would the B.M.A. consider it right that the surgeon should retain £27 18s. of that sum and pay the general practitioner whose case it is in the first place, a mere £2 2s. for the anæsthetic? The first doctor has to take the responsibility of recommending the operation; he meets the surgeon in consultation; he gives the anæsthetic and most probably attends the case till the patient is on his feet again. Now in this case there is only one course to pursue: they must share the fee, for the simple and obvious reason that there is only that one fee to share. The fact is the surgeons, especially the "top-notchers," charge too much for their operations and "Inquirer" is not far wrong when he says that some of them could split their fees in half and still have plenty. The scale of fees for operations wants revising badly if things are to be put on a fair and equal basis, as, odd though it may seem, the small men have got to live as well as the big ones. It is easy enough from the safe entrenchment of the editorial chair (I am terribly afraid you won't want to print this) to talk about philosophy and ethics, but philosophy will not clothe the wife and children nor ethics pay the butcher's bill. Lofty ideals do not go hand in hand with selfish grabbing and until the surgeons moderate their charges I am very much afraid fee-splitting will go on.

Yours, etc.,
"COMMON SENSE."

SIR: I have read with interest your leading article on "fee-splitting" (THE MEDICAL JOURNAL OF AUSTRALIA, December 5, 1925) and also "Inquirer's" letter on the same subject. I think I am correct in saying that fee-splitting is only practised in surgical cases.

The majority of young practitioners are keen on surgery. The facilities of a hospital and an efficient nursing staff in country towns regretfully necessitates the sending of surgical cases to the city surgeon. The patients are there charged big fees and everything goes swimmingly for the big surgeon, but the unfinancial young practitioner is fortunate if he gets his small fee for a couple of visits paid. For that reason the country medico often seizes an opportunity for fee-splitting in seeming justice to himself.

I am of the opinion that the surgeon should demand and have as his assistant or anæsthetist the doctor who sent him the case. For such service the latter should be paid a fee in proportion to that of the surgeon, due allowance being made for the expenses of the country doctor in attending the operation.

At a specified percentage this would obviate all thought of bribery and secret commission.

Dr. McArthur is to be thanked for pulling back the curtains on a common practice, but, unless some such policy as the one I suggest is adopted, the benefit is only to the specialist, provided the practice is stopped. It is up to the Executive Council of the British Medical Association to try and help along the young practitioner. As a start in this direction there should be a general revision in the fees and uniformity in the various States. More especially do I think midwifery fees should be raised. Considering the antenatal treatment that ought to be practised, I think the minimum fee should be six guineas. At the same time the public should be informed that the fee includes antenatal treatment. In this way the public would be educated as to the advisability of engaging their doctor early and so being under his supervision throughout.

Yours, etc.,
"GENERAL PRACTITIONER."

South Australia,
December 12, 1925.

SIR: I quite agree that fee-splitting, as explained in the leading article of THE MEDICAL JOURNAL OF AUSTRALIA of 5th instant, is wrong in principle. I see now that the ignorance which I claimed in my letter of November 10 was not so much in not knowing why fee-splitting was

wrong, as in not knowing what fee-splitting really meant. For one thing you state: "Since the general practitioner is also paid by the patient, the latter would regard the transaction as dishonest, for it involves double payment for one service." My former conception of fee-splitting is illustrated by the following:

A general practitioner honestly recommends an operation and surgeon Y Z to do it. After consulting Y Z, he informs the patient that the fee will be fifteen guineas for Y Z and five guineas for himself for assisting. A feeling of distrust asserts itself and the patient often doubts the necessity of the operation and either goes without it or usually consults a quack who will, of course, confirm the patient in his idea that the operation is unnecessary. Would it not be better in such a case for the patient's welfare (and I hold that always foremost) for Y Z to charge the patient twenty guineas and allow five guineas to the general practitioner? There is here no "double payment." Is there any objection to this procedure?

You are wrong in stating that I "may wish to regard the practice of medicine as a trade and to indulge in commercial expedients." What I say is that in Australia we do employ such expedients and that these are necessary under the present system by which we have trained the public to regard us all as wealthy and that they need pay us only when a feeling of gratitude seizes them. I also say that the dignity and status of the profession among the public here is not high enough.

Why is it that a European foreigner always comes prepared with his fee? For him no accounts—no fee-collectors. Because he has been taught in his country by the profession to respect the doctor and he feels that it is an insult to trouble a medical man unless he can pay him at once. The poorest person in European countries will borrow the necessary small fee from his neighbours before approaching the doctor who, however, will contrive to return it to such indigent patients as he judges worthy. What are we to do here with people who can afford to pay but won't? I should like to see a discussion which would lead to uniformity of action on this question.

Yours, etc.,

"INQUIRER."

Melbourne,
December 10, 1925.

["INQUIRER" asks whether there would be any objection to the proposal that the general practitioner, instead of informing the patient that the surgeon will charge a fee of fifteen guineas and that he will require five guineas for assisting, arrange for twenty guineas to be paid to the surgeon, of which five is retained as his share. Surely the patient will know that the general practitioner will include his fee for assisting in his next account. The patient will not believe that this service will be given gratuitously. There is a grave objection on principle to this secret division of the fee.

The hypothetical case of "Common Sense" is slightly different. If the patient cannot afford more than thirty guineas, the surgeon must be told and urged to accept a smaller fee. If the fee can be split, there is not one fee but two fees. It is easier to do wrong than to do right. The rules of ethical behaviour have been devised not by the incumbents of editorial chairs, but by generations of honourable men and women in active practice. The remedy suggested, that the surgeon should accept smaller fees from patients with limited means, is admirable for one class of dichotomy.—EDITOR.]

CYESŒDEMA.

SIR: With regard to Dr. A. A. Lendon's paper in the issue of December 12 I should like to refer to the nature of "cyesœdema." I should be inclined to the view that Dr. Lendon was referring to the same condition as that referred to by Whitridge Williams which is related to the hypertrophy of the anterior lobe of the pituitary body. On page six hundred and seventy-three one has referred to ovarian hypofunction and the tendency for glands of the opposing pituitary, thyreoid and suprarenal group to hypertrophy during pregnancy. The condition has also been referred to by Erdheim and Biedl who have either *post mortem* or in the living demonstrated the enlarged anterior pituitary lobe, the former macroscopically and by weight and the latter by noting the excavation or enlargement of the *sella turcica*. Osborne, of the Yale University, says: "The pituitary gland is enlarged during pregnancy [illegible]ch as the thyroid and Cushing has found that repeated [illegible] nancies may so enlarge this gland as to cause tran[illegible] bitemporal hemianopsia." Further Osborne states that [illegible]e anterior lobe is the lobe which enlarges, but he says tha[illegible]: "If this lobe does not enlarge, disturbances of metabolism may occur such as puffing of the hands and feet and deposits of fat." My personal inclination, however, is to the view that the enlarged anterior lobe and cyesœdema are concurrent.

Yours, etc.,

R. F. MATTERS.

Gonville Chambers, North Terrace, Adelaide,
December 17, 1925.

SINUSITIS AND COLLLOIDAL MANGANESE.

SIR: Having read Dr. Gutteridge's report on his results of treating certain cases of sinusitis with colloidal manganese, many would hesitate to try its effect. Dr. Gutteridge selected seventeen cases and claims he got no benefit in any of them. I think with care and a large clinic to draw upon I might attain the same results. In the series quoted in my paper (May 9, 1925), eighty-six consecutive cases were quoted, in each of whom there was a yellow post-nasal discharge with the usual symptoms of sinusitis. Ninety-one *per centum* ceased to have any yellow post-nasal discharge and were relieved of all symptoms. One or two with antral infection required operation. In my paper I am stating facts. I do not say that all cases of oldstanding pansinusitis with polypoid degeneration are going to improve. It has been my experience that they do not, but in those cases which have not progressed so far, the results of colloidal manganese is astounding and about this anyone can satisfy themselves who cares to try. Truth is truth and no amount of controversy can alter it, as all cases are recorded and the patients themselves can be seen. I hope these few lines will help to dispell any unfavourable impression Dr. Gutteridge's remarks may have made.

Yours, etc.,

SYDNEY PERN.

12, Collins Street, Melbourne,
December 16, 1925.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered under the provisions of the *Medical Act*, 1912 and 1915, as duly qualified medical practitioners:

Abramovich, Leslie, M.B., 1925 (Univ. Sydney), Chapel Road, Bankstown.

Alexander, Julian Kitchener, M.B., 1925 (Univ. Sydney), 34, Pine Street, Randwick.

Allen, John Chatteris Bell, M.B., 1925 (Univ. Sydney), Bundarra Road, Bellevue Hill.

Allen, Frederick Thomas, M.B., 1925 (Univ. Sydney), 96, Cardigan Street, Stanmore.

Anderson, Phyllis Margery, M.B., 1925 (Univ. Sydney), 16, Croydon Street, Petersham.

Barrett, Denis Francis, M.B., 1925 (Univ. Sydney), Victoria Street, East Maitland.

Baxter, Ernest Joel, M.B., 1925 (Univ. Sydney), 12, Tranmere Street, Drummoyne.

Benjamin, Neil Fernandez, M.B., 1925 (Univ. Sydney), 11, Milner Crescent, Woolstonecraft.

Bennett, Aubrey George, M.B., 1925 (Univ. Sydney), St. Andrew's College, Camperdown.
Boag, James Fraser, M.B., 1925 (Univ. Sydney), 92, Birkeley Road, Manly.
Bray, George William, M.B., 1925 (Univ. Sydney), Post Office, Redfern.
Bryant, Vincent Julian, M.B., 1925 (Univ. Sydney), 247, Ernest Street, North Sydney.
Buddee, Frederick William, M.B., 1925 (Univ. Sydney), 27, Harbour Street, Mosman.
Cole, Colin Richard, M.B., Ch.M., 1924 (Univ. Sydney), Milmerran, Queensland.
Conolly, William Arnold, M.B., 1925 (Univ. Sydney), St. John's Rectory, Gordon.
Corry, Eric Vere, M.R.S.E., Eng., 1918; L.R.C.P., Lond., 1918; M.B., B.S., 1921 (Univ. Lond.), Binnaway.
Cousins, Gordon James, M.B., 1925 (Univ. Sydney), 335, Liverpool Road, Ashfield.
Coyne, Francis Reynolds, M.B., 1925 (Univ. Sydney), Maroubra Bay Road, South Randwick.
Cuttle, Ronald, M.B. B.S., 1920 (Univ. Melbourne), F.R.C.S., Edin., 1924, Junee.
Davies, Walter Leslie, M.B., 1925 (Univ. Sydney), 111, Denison Street, Penshurst.
Douglas, William Joseph Fletcher, M.B., 1925 (Univ. Sydney), Wesley College, Newtown.
Downes, George Brownlow, M.B., 1925 (Univ. Sydney), Brownlow Hill, Camden.
Eakin, Matthew John, M.B. ,1925 (Univ. Sydney), 188, Hereford Street, Forest Lodge.
Egan, Ernest John, M.B., 1925 (Univ. Sydney), Hanbury Street, Waratah.
Emmett, John Albert, M.B., 1925 (Univ. Sydney), Leichhardt Street, Leichhardt.
Findlay, Jack Parkes, M.B., 1925 (Univ. Sydney), 38, Lang Road, Centennial Park.
Fisher, Walter Edward, M.B., 1925 (Univ. Sydney), Wesley College, Newtown.
Fox, Norman Milton David, L.R.C.P., Edin., 1921; L.R.C.S., Edin., 1921; L.R.F.P.S., Glasg., 1921, Roseville.
Fraser, Donald Archibald Strong, M.B., 1925 (Univ. Sydney), 30, College Street, Sydney.
Gissane, William Cooper, M.B., 1925 (Univ. Sydney), University Club, Castlereagh Street, Sydney.
Goldrick, Vincent Thomas, M.B., 1925 (Univ. Sydney), Beresford Road, Rose Bay.
Gourlay, Gwladys Dalrymple, M.B., 1925 (Univ. Sydney), Highfield Road, Lindfield.
Greenaway, Thomas Moore, M.B., 1925 (Univ. Sydney), Hume Street, Crow's Nest.
Halberstater, Leslie, M.B., 1925 (Univ. Sydney), 16, Brown's Avenue, Marrickville.
Hardie, John Patrick, M.B., 1925 (Univ. Sydney), 41, Fern Street, Randwick.
Hardwicke, George Augustus, M.B., 1925 (Univ. Sydney), Walton Crescent, Abbotsford.
Harrison, Henley Henderson, M.B., 1925 (Univ. Sydney), Gordon Road, Chatswood.
Holcombe, Tristram Essex Young, M.B., 1925 (Univ. Sydney), Yerton Avenue, Hunter's Hill.
Holt, John Ackland, M.B., 1925 (Univ. Sydney), Mary Street, Leichhardt.
Hoskins, Albert Edward Roy, M.B., 1925 (Univ. Sydney), New Canterbury Road, Dulwich Hill.
Hughes, Robert Thomas Childe, M.B., 1925 (Univ. Sydney), Burrawong, near Moss Vale.
Johnston, Henry Lyon, M.B., 1925 (Univ. Sydney), Tupper Street, Marrickville.
Keatinge, Leila Kathleen, M.B., 1925 (Univ. Sydney), Beta Street, Lane Cove.
Kessell, John Samuel, M.B., B.S., 1923 (Univ. Adelaide), Broken Hill.
King, Wallace William Henry, M.B., 1925 (Univ. Sydney), Glebe Street, Ryde.
Kirkland, Keith Lindsay Hugh, M.B., 1925 (Univ. Sydney), Wesley College, Newtown.
Kite, Miles Gordon, M.B., 1925 (Univ. Sydney), Karralee, Kelso.
Le Cappelaine-Taylor, Roy Stanley, M.B., 1925 (Univ. Sydney), Sophia Street, Bondi.
Little, William Norman, M.B., 1925 (Univ. Sydney), St. Paul's College, Newtown.
Machin, William Frederick, M.B., 1925 (Univ. Sydney), Wandella Avenue, Roseville.
Macindoe, Norman Macleod, M.B., 1925 (Univ. Sydney), Boulevarde, Strathfield.
Markell, Phillip Justin, M.B., 1925 (Univ. Sydney), 15, Onslow Avenue, Elizabeth Bay.
Marshall, Stuart Vance, M.B., 1925 (Univ. Sydney), Ravensworth, New South Wales.
Maxwell, Duncan Struan, M.B., 1925 (Univ. Sydney), c.o. Mr. Justice Sly, Jersey Road, Strathfield.
Mitchell, Hugh Grenville, M.B., 1925 (Univ. Sydney), Gooyong, Camden.
Morey, Brian Russell, M.B., 1925 (Univ. Sydney), Weston Road, Parramatta.
Moroney, Gerald Thomas, M.B., 1925 (Univ. Sydney), Stanton Road, Haberfield.
Morris, George Bentham, M.B., 1925 (Univ. Sydney), 31, Woodstock Avenue, Waverley.
Nihill, Robert, M.B., 1925 (Univ. Sydney), 19, Rawson Street, Haberfield.
Oakeshott, John Bernard, M.B., 1925 (Univ. Sydney), Arnold Crescent, Killara.
Pearce, Thomas Russell, M.B., 1925 (Univ. Sydney), Beresford Avenue, Chatswood.
Pearlman, Henry, M.B., 1925 (Univ. Sydney), 436, New Canterbury Road, Dulwich Hill.
Perkins, Robin Roussel McCreadie, M.B., 1925 (Univ. Sydney), The Manse, Ethel Street, Eastwood.
Phillips, John Richard, M.B., 1925 (Univ. Sydney), Nelma, Seaforth, Manly.
Rich, Harold George, M.B., 1925 (Univ. Sydney), Pymble Hotel, Pymble.
Rickeard, James Harold, M.B., 1925 (Univ. Sydney), 149, Cambridge Street, Stanmore.
Roberts, Herbert Spencer, M.B., 1925, (Univ. Sydney), Sir Thomas Mitchell Road, Bondi.
Rossiter, Charles Benjamin, L.R.C.P., Edin, 1895; L.R.C.S., Edin., 1895; L.F.P.S., Glasg., 1895; F.R.C.S., Edin., 1899; M.D. (Univ. Durham), 1922, c.o. Messrs. Arthur Yates & Co., Sussex Street, Sydney.
Russell, Robert Heathcote, M.B., 1925 (Univ. Sydney), Siisoe Street, Hamilton.
Salter, Arthur Edward Harrison, M.B., 1925 (Univ. Sydney), Hawthorn, Abbotsford Road, Homebush.
Sandes, Stephen Graham, M.B., 1925 (Univ. Sydney), c.o. H. F. Ray, Grosvenor Road, Lindfield.
Sherwood, Norman Leslie, M.B., 1925 (Univ. Sydney), The Austral, Lamrock Avenue, Bondi.
Shaw, Alfred Eland, M.R.C.S., Eng., 1892; L.R.C.P., Lond., 1892, 77, Bradley's Head Road, Mosman.
Shipton, Eva Adeline, M.B., 1925 (Univ. Sydney), Parkes Street, Guildford.
Simpson, Brenda Elizabeth Charles, M.B., 1925 (Univ. Sydney), Albert Road, Haberfield.
Smith, William Cletus, M.B., 1925 (Univ. Sydney), Douglas Street, Dulwich Hill.
Solomons, Noel Simon, M.B., 1925 (Univ. Sydney), 1, Milton Hall, Kidman Street, Coogee.
Spearman, Horace Layton, M.B., 1925 (Univ. Sydney), 49, Ourimbah Road, Mosman.
Squire, Doris Wills, M.B., 1925 (Univ. Sydney), 19, Archer Street, Chatswood.
Stanley, William Ambrose, M.B., 1925 (Univ. Sydney), 26, Wellington Street, Bondi.
Steele, Spencer Carlisle, M.B., 1925 (Univ. Sydney), Norfolk Road, Epping.
Tarlinton, Kevin Faulkner, M.B., 1925 (Univ. Sydney), 56, Kareela Road, Cremorne.
Trainor, Desmond Coleman, M.B., 1925 (Univ. Sydney), 26, Campbell Street, Waverley.
Unwin, Maurice Leslie, M.B., 1925 (Univ. Sydney), 16, Brown's Avenue Marrickville.
Voss, Kerrod Bromley, M.B., 1925 (Univ. Sydney), St. Paul's College, Newtown.

Vote, James Alexander, M.B., 1925 (Univ. Sydney), Duntroon Avenue, Woolstonecraft).
Walch, Christine Martha, M.B., 1925 (Univ. Sydney), 16, Westbourne Street, Drummoyne.
Whitesides, Arthur Lyndhurst, M.B., 1925 (Univ. Sydney), City Road, Darlington.
Wilkinson, Herbert John, M.B., 1925 (Univ. Sydney), 53, Liverpool Road, Summer Hill.
Wilson, Harold Frederick, M.B., 1925 (Univ. Sydney), Fairfax Road, Bellevue Hill.
Wilson, James Newell Hunton, M.B., 1925 (Univ. Sydney), 42, Bay Street, Rockdale.
Wilson, William Roy, M.B., 1925 (Univ. Sydney), River Road, Greenwich.

Additional Qualification.

O'Halloran, Patrick Leo Alphonsus, Ch.M., 1925 (Univ. Sydney).

JOHN IRVINE HUNTER MEMORIAL FUND.

THE following additional subscriptions to the John Irvine Hunter Memorial Fund have been received by the Honorary Treasurers:

	£	s.	d.
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Books Received.

METHODS AND PROBLEMS OF MEDICAL EDUCATION (Third Series). Issued by The Rockfeller Foundation, New York. Demy 4to., pp. 242.

PHYSIOTHERAPY: THEORY AND CLINICAL APPLICATION, by Harry Eaton Stewart, M.D.; 1925. New York: Paul B. Hoeber, Incorporated. Royal 8vo., pp. 363, with illustrations. Price: $7·50 net.

DENTITION AND PALATE OF THE AUSTRALIAN ABORIGINAL, by T. D. Campbell, D.D.Sc.; Issued by the University of Adelaide; 1925. Adelaide: The Hassell Press. Crown 4to., pp. 123, with illustrations.

INSECTS AND DISEASE OF MAN, by Carroll Fox, M.D.; 1925. Philadelphia: P. Blakiston's Son and Company. Royal 8vo., pp. 261, with illustrations. Price: $4·00 net.

LISTER AND THE LIGATURE: Compiled by the Research Readers of the Scientific Department; 1925. New Brunswick: Johnson and Johnson. Demy 8vo., pp. 89.

PUBLIC HEALTH LABORATORY WORK (CHEMISTRY), by Henry R. Kenwood, C.M.G., M.B., F.R.S. (Edinburgh), D.P.H., F.C.S.; Eighth Edition; 1925. London: H. K. Lewis and Company, Limited. Demy 8vo., pp. 381, with illustrations. Price: 12s. 6d. net.

RECENT ADVANCES IN PHYSIOLOGY, by C. Lovatt Evans, D.Sc. (London), F.R.C.S., L.R.C.P., F.R.S.; 1925. London: J. & A. Churchill; Sydney: Angus & Robertson, Limited. Demy 8vo., pp. 364, with illustrations. Price: 12s. 6d. net.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xx.

LUNACY DEPARTMENT, VICTORIA: Junior Medical Officer.

PEAK DOWNS HOSPITAL, CLERMONT, QUEENSLAND: Resident Surgeon.

ROYAL AUSTRALIAN AIR FORCE: Medical Officers, Citizen Air Force—One in Sydney, One in Melbourne.

TIBOOBURRA DISTRICT HOSPITAL, TIBOOBURRA, NEW SOUTH WALES: Resident Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C. 1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Ceduna, Wudinna (Central Eyre's Peninsula), Murat Bay and other West Coast of South Australia Districts.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

JAN. 5.—New South Wales Branch, B.M.A.: Council (Quarterly).
JAN. 7.—South Australian Branch, B.M.A.: Council.
JAN. 12.—New South Wales Branch, B.M.A.: Ethics Committee.
JAN. 14.—Victorian Branch, B.M.A.: Council.
JAN. 18.—New South Wales Branch, B.M.A.: Organization and Science Committee.
JAN. 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JAN. 26.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JAN. 27.—Victorian Branch, B.M.A.: Council.
FEB. 3.—Federal Committee of the British Medical Association in Australia: Meeting at Melbourne.
FEB. 3.—Victorian Branch, B.M.A.: Presentation of Balance Sheet, 1925.
FEB. 4.—South Australian Branch, B.M.A.: Council.
FEB. 9.—New South Wales Branch, B.M.A.: Ethics Committee.
FEB. 11.—Victorian Branch, B.M.A.: Council.
FEB. 16.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
FEB. 24.—Victorian Branch, B.M.A.: Council.
FEB. 25.—South Australian Branch, B.M.A.: Scientific Meeting.

Editorial Notices.

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